

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Jeff EDER

Serial No.: 09/761,670

Filed: October 17, 2000

For: A METHOD OF AND SYSTEM FOR EVALUATING CASH FLOW AND ELEMENTS OF A BUSINESS ENTERPRISE

Group Art Unit: 3692

Examiner: Sigfried Chencinski

Supplemental Brief on Appeal

Sir or Madam:

The Appellant appeals the rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 86 in the January 3, 2007 Office Action for the above referenced application.

This Supplemental Brief on Appeal is responsive to the Office Communication mailed February 19, 2009.

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1. Real party in interest

Asset Reliance, Inc. (dba Asset Trust, Inc.) is the assignee of 100% interest in the above referenced patent application.

2. Related appeals

An Appeal for U.S. Patent Application 08/999,245 filed on December 10, 1997 may be affected by or have a bearing on this appeal. An appeal for U.S. Patent Application 10/282,113 filed October 29, 2002 may be affected or have a bearing on this appeal. An Appeal for U.S. Patent Application 10/283,083 filed on October 30, 2002 may be affected by or have a bearing on this appeal. An Appeal for U.S. Patent Application 10/743,417 filed on December 22, 2003 may be affected by or have a bearing on this appeal. An appeal for U.S. Patent Application 10/750,792 filed January 3, 2004 may be affected or have a bearing on this appeal. An Appeal for U.S. Patent Application 11/278,419 filed on April 1, 2006 may be affected by or have a bearing on this appeal.

3. Status of Claims

Claims 43 - 46, 48 – 52, and claims 54 - 86 are rejected and are the subject of this appeal. No other claims are pending. Claims 1 – 42, 47, 53 and 87 – 88 have previously been cancelled without prejudice.

4. Status of Amendments

Claim 80 was amended on April 20, 2009 to obviate a claim rejection and put the application in a final form for allowance and issue.

5. Summary of Claimed Subject Matter

One embodiment of a method of and system for evaluating cash flow and elements of a business enterprise according to the present invention is best depicted in Figure 1 – 12 of the specification. Figure 1 gives an overview of the major processing steps which include obtaining data for use in analysis and transforming the data into models of real world financial performance for a commercial enterprise using the data.

Independent Claim 43 - One embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 43 where a computer system obtains a plurality of data representative of a business enterprise in a format suitable for processing and transforms said data into a plurality of network models that have utility in completing forecasts. Support in the specification for this claim is detailed below:

a) a computer with a processor having circuitry to execute instructions; a storage device available

to said processor with sequences of instructions stored therein - the computer system and stored instructions are described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification. The activities that the stored instructions cause the processor to perform are detailed in the specification starting and line 28, page 13 through the end of the specification.

b) obtain a plurality of data related to a value of a business enterprise in a format suitable for processing - data from a plurality of enterprise management systems are prepared for use in model processing as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B, reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6, reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317, line 15, page 10 through line 27, page 11 and line 15, page 15 through the end of page 40 of the specification. Aspects of the acquisition, conversion and storage of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.

c) evolve a plurality of network models for connecting one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of: input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value -The general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of network models for expense is described in FIG. 8B, reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 31, page 49 through line 17, page 50 of the specification. The evolution of network models for capital change is described in FIG. 8C, reference numbers 511, 513, 514, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 20, page 50 through line 8 page 51 of the specification. The evolution of a network model for cash flow is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

d) where each network model from a plurality of network models supports the development of a

controlling forecast for use in optimizing purchasing. The use of a controlling forecast to optimize purchasing is detailed on column 25, line 61 through column 27, line 49 of cross referenced U.S. Patent 5,615,109. This material could be incorporated in accordance with 37 CFR 1.57.

Claim 44 - The limitations associated with dependent claim 44 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9.

Claim 45 - The limitations associated with dependent claim 45 are described in line 10, page 16 – line 18, page 16 and Table 17, page 31 of the specification.

Claim 46 - The limitations and activities associated with dependent claim 46 are described in FIG 11A reference numbers 604, 607 & 610 and line 20, page 52 – line 5, page 55 of the specification. The act(s) comprises training best fit models and using the weights from the best fit models of each component of value to determine the relative contribution of each element of value using a structure comprised of a plurality of network models.

Claim 48 - The limitations associated with dependent claim 48 are described in FIG 5A reference number 202 and line 1, page 24 – line 6, page 25 of the specification.

Claim 49 - The limitations and activities associated with dependent claim 49 are described in FIG 11A reference number 611 and line 6, page 55 – line 14, page 55 of the specification. The act(s) comprises combining the relative contribution of each element of value to each component of value with the present value of each component of value to determine a value for each element of value.

Claim 50 - The limitations associated with dependent claim 50 are described in a number of places including Table 16, page 30 and Table 17, page 31.

Claim 51 - The limitations associated with dependent claim 51 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and

508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9. The structure(s) comprises a plurality of neural network models that are trained with genetic algorithms.

Claim 52 - The limitations associated with dependent claim 52 are described in line 15 through line 17, page 15, line 24 and page 30 through line 3, page 32 of the specification. The structure(s) comprises a plurality of neural network models that use business event data for processing.

Independent claim 54 - A second embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 54 where a process aggregates a plurality of data representative of a business enterprise and transforms the data into a plurality of network models of said enterprise that have utility in completing forecasts. Support in the specification for this claim is detailed below:

a) *aggregating firm related data from a plurality of systems in accordance with a common data dictionary* - data from a plurality of enterprise management systems are aggregated in accordance with a common dictionary as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317 and line 15, page 15 through the end of page 40 of the specification. Aspects of the aggregation of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.

b) *using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of: one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance, and a plurality of relationships where each relationship is a function of an impact of each element on other elements of value or an aspect of financial performance* - The general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The

evolution of network models for expense is described in FIG. 8B, reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 31, page 49 through line 17, page 50 of the specification. The evolution of network models for capital change is described in FIG. 8C, reference numbers 511, 513, 514, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 20, page 50 through line 8 page 51 of the specification. The evolution of a network model for cash flow is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

c) *where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.* The use of a controlling forecast to optimize purchasing is detailed on column 25, line 61 through column 27, line 49 of cross referenced U.S. Patent 5,615,109. This material could be incorporated in accordance with 37 CFR 1.57.

Claim 55 - The limitations associated with dependent claim 55 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification.

Claim 56 - The limitations associated with dependent claim 56 are described in line 10, page 16 through line 18, page 16 and Table 17, page 31 of the specification.

Claim 57 and 58 - The limitations and activities associated with dependent claims 57 and 58 are described in FIG 11A reference numbers 604, 607 & 610 and line 20, page 52 through line 5, page 55 of the specification. The act(s) comprise determining the net impact of each element of value on each component of value using network model weights and combining the impact of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 59 - The limitations and activities associated with dependent claim 59 are described in the same locations identified previously for claim 44. The act(s) comprises training a plurality of network models by using genetic algorithms.

Claim 60 - The limitations and activities associated with dependent claim 60 are described in FIG

5A reference number 202 and line 1, page 24 through line 6, page 25 of the specification.

Claim 61 - The limitations and activities associated with dependent claim 61 are described in FIG 11A reference number 611 and line 6, page 55 through line 14, page 55 of the specification. The act(s) comprises combining the relative contribution of each element of value to each component of value with the present value of each component of value to determine a value for each element of value.

Claim 62 - The limitations and activities associated with dependent claim 62 are described in a number of places including Table 16, page 30 and Table 17, page 31. The act(s) comprise combining the relative contribution of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 63 - The limitations associated with dependent claim 63 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9. The structure comprises a plurality of neural network models.

Claim 64 - The limitations associated with dependent claim 64 are described in FIG 5A reference number 205 and line 12, page 26 through line 3, page 27 of the specification.

Claim 65 - The limitations associated with dependent claim 65 are described in line 15 through line 17, page 15, line 24 and page 30 through line 3, page 32 of the specification. The structure(s) comprises a plurality of neural network models that use business event data for processing.

Claim 66 - The limitations associated with dependent claim 66 are a number of places including FIG 1 reference numbers 5, 10, 15, 30, 35 and 40 and FIG. 5B reference number 222.

Independent Claim 67 - A third embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 67 where a two step method integrates a plurality of data representative of a business enterprise and transforms the data into a plurality of network models of said enterprise that have utility in completing forecasts.

Support in the specification for this claim is detailed below:

- a) *A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform a firm analysis method* - the computer system and computer readable medium are described in FIG. 3, reference numbers 100, 110 – 119, 120 – 128, 130 – 137, 200, 300, 400, 500, 600, 700, 800 and 900 and line 28, page 11, through line 27, page 13 of the specification. The activities that the computer readable medium causes the processor to perform are detailed in the specification starting and line 28, page 13 through the end of the specification.
- b) *integrating business related data for a firm using a common dictionary* - data from a plurality of enterprise management systems are integrated in accordance with a common data dictionary as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317, line 15, page 10 through line 27, page 11 and line 15, page 15 through the end of page 40 of the specification. Aspects of the acquisition, conversion and storage of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.
- c) *using at least a portion of the data to generate a plurality of network models which connect one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of: one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance and a plurality of relationships where each relationship is a function of the impact of each element on other elements of value or an aspect of financial performance* - The general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of network models for expense is described in FIG. 8B, reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 31, page 49 through line 17, page 50 of the specification. The evolution of network models for capital change is described in FIG. 8C, reference numbers 511, 513, 514, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 20, page 50 through line 8 page 51 of the specification. The evolution of a network model for cash flow is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

d) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing. The use of a controlling forecast to optimize purchasing is detailed on column 25, line 61 through column 27, line 49 of cross referenced U.S. Patent 5,615,109. This material could be incorporated in accordance with 37 CFR 1.57.

Claim 68 - The limitations and activities associated with dependent claim 68 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification. It is well known by those of average skill in the art that cash flow is related to market value.

Claim 69 - The limitations and activities associated with dependent claim 69 are described in line 10, page 16 through line 18, page 16 and Table 17, page 31 of the specification.

Claim 70 and 71 - The limitations and activities associated with dependent claims 70 and 71 are described in FIG 11A reference numbers 604, 607 & 610 and line 20, page 52 through line 5, page 55 of the specification. The act(s) comprise determining the net impact of each element of value on each component of value using weights from a best fit model and combining the impact of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 72 - The limitations and activities associated with dependent claim 72 are described in the same locations identified previously for claim 44. The act(s) comprises training a plurality of network models with genetic algorithms.

Claim 73 - The limitations associated with dependent claim 73 are described in FIG 5A reference number 202 and line 1, page 24 through line 6, page 25 of the specification.

Claim 74 - The limitations and activities associated with dependent claim 74 are described in FIG 11A reference number 611 and line 6, page 55 through line 14, page 55 of the specification. The act(s) comprise combining the relative contribution of each element of value with the present value of each component of value to determine a value for each element of value.

Claim 75 - The limitations associated with dependent claim 75 are described in a number of places including Table 16, page 30 and Table 17, page 31.

Claim 76 - The limitations associated with dependent claim 76 are described in a number of places including FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification; FIG. 8A reference numbers 501 – 504, 525, 530, 535, 540, 545 and 550, line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 505, 507 and 508, 525, 530, 535, 540, 545 and 550 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 511, 513 and 514, 525, 530, 535, 540, 545 and 550 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550 and line 10, page 51 through line 3, page 52 of the specification and FIG. 9. The structure comprises a plurality of neural network models.

Claim 77 - The limitations associated with dependent claim 77 are described in FIG 5A reference number 205 and line 12, page 26 through line 3, page 27 of the specification.

Claim 78 - The limitations associated with dependent claim 78 are described in line 15 through line 17, page 15, line 24 and page 30 through line 3, page 32 of the specification. The structure(s) comprises a plurality of neural network models that use business event data for processing.

Claim 79 - The limitations associated with dependent claim 79 are described in a number of places including FIG 1 reference numbers 5, 10, 15, 30, 35 and 40 and FIG. 5B reference number 222.

Independent Claim 80 - A fourth embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 80 where a method accesses a plurality of enterprise related data via an interface coupled to a plurality of data sources, converts said data to a common schema using an application software segment and stores the data in a database (50) for later use in processing.

a) *accessing a plurality of data representative of enterprise via an interface coupled to a plurality of data sources, converting said data to a common schema using an application software segment, and storing said converted data in a database for use in processing* - data from a plurality of enterprise management systems are converted and stored in accordance with a common schema as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6 reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317 and line 15, page 15 through the end of page 40 of

the specification. Aspects of the aggregation of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109. The plurality of data sources are identified in FIG. 1 and line 22, page 10 through line 25, page 10. The data comprise data regarding business events that have been logged or recorded including non-repetitive support calls, total support calls, products kept by customers, total products purchased by customers, non-repetitive service calls, total service calls, correct invoice line items, total invoice line items, months since last order, average months since last order, accounts receivable balance in days, average days to pay, ratio of new products purchased, ratio new products available, average percentage proprietary products purchased, proprietary products delivered percentage, months with orders, months since first order, standard hours, paid hours, good production, total production, implemented suggestions, total time employed, price premium, web site traffic trend and advertising average cost per 1000.

The enterprise definition and the definitions for revenue, expense and capital change are developed and stored as described in FIG. 5A reference numbers 206 and 207 and line 15, page 26 through line 16, page 27 of the specification. Because there is only one revenue component for each enterprise, the enterprise definition also defines the revenue component. These definitions are then combined with the previously developed information to guide the extraction, integration and storage of the financial data used to represent aspects of financial performance for model development as described in FIG. 5A reference number 210 and line 1, page 29 through line 17, page 29 of the specification. In a revenue model, the revenue data sets the value of the output node (730) for the network model by period as described in FIG. 8A, reference number 504 and line 26, page 46 through line 29, page 46 of the specification. In a similar fashion, the expense data sets the value of the output node (730) for expense models as described in FIG. 8B, reference number 508 and line 8 of page 50 of the specification and the capital change data sets the value of the output node (730) for capital change models as described in FIG. 8C, reference number 514 and line 32 of page 50 of the specification. The identity and definition of elements of value present in the business and the source(s) of data related to their performance are specified by the user as described in FIG. 5B reference number 221 and line 33, page 29 through line 31, page 30 of the specification. The element of value definitions are combined with previously developed information to guide the integration and storage of the data used to calculate composite variables by period as described in FIG. 5B reference number 222 and line 5, page 32 through line 17, page 29 of the specification. Sub-elements of value are optionally enabled by the user. If sub-elements of value are enabled, then their number and identify are determined analytically as

described in FIG. 6 reference number 316 and line 25, page 37 through line 29, page 39. After the processing is completed as outlined above, the extracted data have been converted and stored in accordance with a common schema.

Claim 81 - The limitations associated with dependent claim 81 are described in line 7, page 17 through line 34, page 17 of the specification. The structure comprises a plurality of relational databases.

Claim 82 - The limitations and activities associated with dependent claim 82 are described in FIG. 1 reference number 25 and line 21, page 10 through line 35, page 10 of the specification. The structure comprises a network connection.

Claim 83 - The limitations and activities associated with dependent claim 83 are described in FIG. 5A reference numbers 203, 205. FIG 9 reference number 703 and 710 and line 26, page 25 through line 10, page 26 of the specification.

Claim 84 - The limitations and activities associated with dependent claim 84 are described in Table 12, page 24, FIG. 5A reference number 210, FIG. 5B reference number 222, line 5, page 22 through line 17, page 29 of the specification. The conversion and storage of data is also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109. The act(s) comprise converting and storing data.

Independent Claim 85 - A fifth embodiment of the method of and system for evaluating cash flow and elements of a business enterprise is exemplified in independent claim 85 where a process identifies the data required for analyzing a commercial enterprise, prepares the data for use in analysis, analyzes the data to identify a number of statistics before developing a model of enterprise current operation financial performance using said statistics and automated learning. Support in the specification for this claim is detailed below:

a) *identifying a set of data required for analyzing a commercial enterprise, preparing the identified set of data for use in analysis, analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof* - data from a plurality of enterprise management systems are analyzed and prepared for use in model processing as described in FIG.1, reference numbers 200 and 300; FIG. 5A, reference numbers 10, 15, 30, 35, 40, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 212 and 213; FIG. 5B reference numbers 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 232 and 235; FIG. 6

reference numbers 306, 307, 308, 309, 310, 312, 313, 315, 316, 317, line 15, page 10 through line 27, page 11 and line 15, page 15 through the end of page 40 of the specification. Aspects of the acquisition, conversion and storage of data in accordance with a common data dictionary are also described in line 40, column 35 through line 25, column 39 of cross referenced U.S. Patent 5,615,109.

b) using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning - the general procedure for model evolution and the evolution of a network model for revenue is described in FIG. 8A, reference numbers 501, 502, 503, 504, 525, 530, 535, 540, 545 and 550, FIG. 9 and line 5, page 44 through line 30, page 49 of the specification. The evolution of a network model for cash flow which comprises a model of current operation financial performance is described in FIG. 8D reference numbers 571, 572 and 573, 525, 530, 535, 540, 545 and 550, FIG. 9 and in line 10, page 51 through line 3, page 52 of the specification.

c) where the model mathematically expresses the dynamic characteristics and behavior of each element of value as including direct effects and indirect effects from each element of value – as described in FIG 5B, reference number 222 and line 5, page 32 through line 9, page 32 of the specification, a value for each composite variable (which summarize the impact of each element of value) is calculated for every time period. This allows the model to capture the dynamic characteristics and behavior of each element of value. As described in FIG. 11A, reference number 604 and as shown in Formula 8 at the top of page 53, the model weights are used to quantify the direct and indirect effects from each element of value.

Claim 86 - The limitations and activities associated with dependent claim 86 are described in a number of places including FIG. 8A reference numbers 525, 530 and 535, and line 5, page 44 through line 30, page 49 of the specification, FIG. 8B reference numbers 525, 530 and 535 and line 31, page 49 through line 17, page 50 of the specification; FIG. 8C reference numbers 525, 530 and 535 and line 20, page 50 through line 8 page 51 of the specification; and FIG. 8D reference numbers 525, 530 and 535 and line 10, page 51 through line 3, page 52 of the specification. The act(s) comprise completing a number of automated learning steps that enhance the automated learning capabilities of the well known set of processing steps that are often completed by a neural net.

6. Grounds of rejection to be reviewed on appeal

Issue 1 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and/or claim 79 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

Issue 2 - Whether claim 63 and/or claim 76 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Jost (U.S. Patent 5,361,201)?

Issue 3 - Whether claim 80, claim 81, claim 82, claim 83 and/or claim 84 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

Issue 4 - Whether claim 85 is patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

Issue 5 - Whether claim 51 and/or claim 86 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Barr (U.S. Patent 5,761,442)?

Issue 6 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and/or claim 86 are enabled under 35 U.S.C. 112, first paragraph?

Issue 7 - Whether the invention described in claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52, represents patentable subject matter under 35 U.S.C. 101?

Issue 8 - Whether the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 represents patentable subject matter under 35 U.S.C. 101?

Issue 9 - Whether the invention described in claims claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 represents patentable subject matter under 35 U.S.C. 101?

Issue 10 - Whether the invention described in claims 80, claim 81, claim 82, claim 83, and claim 84 represents patentable subject matter under 35 U.S.C. 101?

Issue 11 - Whether the invention described in claim 85 and claim 86 represents patentable subject matter under 35 U.S.C. 101?

Issue 12 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and/or claim 79 are indefinite under 35 U.S.C. 112, second paragraph?

Issue 13 - Whether claim 80, claim 81, claim 82, claim 83 and/or claim 84 are indefinite under 35 U.S.C. 112, second paragraph?

Issue 14 – Whether claim 85 and/or claim 86 are indefinite under 35 U.S.C. 112, second paragraph?

7. The Argument

Grouping of Claims

For each ground of rejection which Appellant contests herein that applies to more than one claim, such additional claims, to the extent separately identified and argued below, do not stand and fall together.

Issue 1 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and/or claim 79 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

The claims are patentable because the Sandretto document fails to establish a prima facie case of obviousness, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - The first reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 are patentable is that Sandretto fails to establish a prima facie case of obviousness because it does not teach or suggest one or more of the limitations for every rejected claim. *“When determining whether a claim is obvious, an examiner must make ‘a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.’ In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, ‘obviousness requires a suggestion of all limitations in a claim.’ CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing In re Royka, 490 F.2d 981, 985 (CCPA 1974))* Furthermore, the Board of Patent Appeal and Interferences recently confirmed (In re Wada and Murphy, Appeal No. 2007-

3733) that a proper, post KSR obviousness determination still requires that an examiner must make “a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). In other words, obviousness still requires a suggestion of all the limitations in a claim. Limitations not taught or suggested by the cited prior art are detailed below:

- a) Claim 43, (affects claims 44 – 50 and claim 52). Limitations not taught or suggested include:
 - 1) evolving a plurality of network models for connecting one or more elements of value of a firm to one or more aspects of financial performance of said firm,
 - 2) network models comprised of input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and
 - 3) a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value, and/or
 - 4) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing
- b) Claim 54 and 67 (affects claims 55 – 66, and claims 68 - 79). Limitations not taught or suggested include:
 - 1) generating a plurality of network models for connecting one or more elements of value of a firm to one or more aspects of financial performance of said firm,
 - 2) network models comprised of input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and
 - 3) a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value, and/or
 - 4) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing
- c) Claims 44, 55 and 68. Limitations not taught or suggested include:
 - 1) a network model with an output representing firm revenue,
 - 2) a network model with an output representing firm expense,
 - 3) a network model with an output representing firm capital change, and/or
 - 4) a network model with an output representing firm market value.
- d) Claims 45, 56 and 69. Limitations and activities not taught or suggested include:

- 1) a summary of value drivers by element of value;
 - 2) a summary of value drivers by element of applied to each input node, and/or
 - 3) value driver summaries that summarize the impact of each of said elements of value on one or more aspects of financial performance.
- e) Claims 46, 57, 58, 70 and 71. Limitations and activities not taught or suggested include:
- 1) using the weights from the best fit models to identify the relative contribution of each element of value to each component of value net of any impact on the other elements of value.
- f) Claims 48, 60 and 73. Limitations and activities not taught or suggested include:
- 1) a model where a plurality of relationships between nodes are quantified for a specified point in time within a sequential series of points in time.
- g) Claims 49, 61 and 74. Limitations and activities not taught or suggested include:
- 1) combining the relative contribution of each element of value to the components of value with the present value of said components of value to determine the current operation value of each element of value where the components of value are revenue, expense and capital change.
- h) Claims 50, 62 and 75. Limitations and activities not taught or suggested include:
- 1) a brand element of value,
 - 2) a customer element of value, and/or
 - 3) an employee element of value.
- i) Claims 52, 65 and 78. Limitations and activities not taught or suggested include:
- 1) a plurality of business event network models.
- j) Claims 59, 66, 72 and 79. Limitations and activities not taught or suggested include:
- 1) training one or more best fit network models using one or more genetic algorithms.

Reason #2 – The second reason the claims are patentable is that Sandretto fails to establish a *prima facie* case of obviousness for claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 by teaching away from all claimed methods and limitations. MPEP § 2141.02 states that: “*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious.*” Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.* W.L. Gore &

Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Examples of Sandretto teaching away from the claimed invention include:

- 1) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes the exclusive use of network models to develop forecasts.

Sandretto teaches away by teaching the use of a iterative process that can utilize a wide range of forecasting methods (see Sandretto, Column 3, L 21 through L 25).

- 2) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes the transformation of data representative of a business operation and its elements of value into network models that have utility in business forecasting and performance management.

Sandretto teaches away by teaching the use of an iterative process that manipulates a model that was input by a user and does not have the ability to transform data into a model (see Sandretto, Column 3, L 21 through L 25).

- 3) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes the transformation of data representative of a business operation and its elements of value into models without adjusting any input variable values.

Sandretto teaches away by teaching a method that relies exclusively on the adjustment of input variable values in order to back-fit the value of a plurality of items to a known portfolio value.

- 4) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes a model development method that uses a best fit model to identify the previously unknown impact of an element of value on a firm.

Sandretto teaches away by teaching that the financial performance of each asset of a firm or portfolio is a known function of economic variables (see Sandretto, abstract and Column 9, L 20 through L 25).

- 5) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes a model development method that does not rely on any assumptions about market efficiency.

Sandretto teaches away by teaching an analysis method that relies on the efficient market hypothesis (see Sandretto, Column 9, L 54 through L 60).

- 6) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes the use of a plurality of network models for completing an element of value level analysis of firm performance. Elements of value are comprised of a plurality of items that are grouped together for modeling, analysis and management.

Sandretto teaches away by teaching the item (i.e. asset) level analysis of the value of a portfolio or firm (see Sandretto, C10, L 1 through L15). Jost and Barr also teach item level analysis.

7) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes the use of a plurality of network models to model the impact of one or more elements of value on one or more aspects of financial performance for a firm. Elements of value include brands, customers and employees.

Sandretto teaches away by teaching that economic variables determine the performance of a firm and/or a portfolio of assets (see Sandretto, abstract, Column 3, L 8 through L 11).

8) Claims 43, 54 and 67 (affects claims 44 – 50, claim 52, claims 55 – 66, and claims 68 – 79) describes the use of a plurality of network models to model the impact of one or more elements of value on one or more aspects of financial performance for a firm. Implicit in this approach is the assumption that there may be interaction between elements of value that has an impact on financial performance.

Sandretto teaches away by teaching and relying on the fact that there is no interaction between the different assets.

9) Claims 49, 61 and 74 describes the calculation of value for a plurality of elements of value using a single discount rate (i.e. the cost of capital) for each and every element of value.

Sandretto teaches away by teaching the adjustment of the estimated risk and the associated discount rate for each asset as required to back-fit to a known portfolio value (see Sandretto, Column 9, L 20 through L 25).

10) Claims 59, 66, 72 and 79 describe evolving one or more best fit network models using one or more genetic algorithms.

Sandretto teaches away by teaching the use of a iterative process that does not involve genetic algorithms (see Sandretto, Column 3, L 21 through L 25). Jost also teaches away by teaching the development of neural network models without the use of genetic algorithms.

11) The claimed invention (affects all claims) teaches and relies on the fact that there are at least three ways to increase the value of a business: increase the value of the elements of value, increase the value of growth options and increase the value of business cash flow.

Sandretto teaches away by teaching that there is only one way increase value, increase the value of cash flow from assets.

Reason #3 - The third reason claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 are patentable is the fact that the Examiner has not been able to explain how or why the Sandretto invention would be modified to replicate the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35*

U.S.C. 103 should be made explicit. The Court quoting *In re Kahn* 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).’ In spite of this well known requirement, the Examiner has not explained how or why modification of Sandretto should be made in spite of numerous reasonable requests that the Examiner provide such an explanation. The inability to explain how the teachings of a patent (that teach those of average skill in the art how to make and practice their inventions) should be modified provides evidence that the Examiner does not appear to possess the average level of skill in the art required to examine a patent or author valid written description or claim rejections.

Reason #4 - The fourth reason the claims are patentable is that the cited document fails to establish a *prima facie* case of obviousness for claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 because the unspecified modification would have to change one or more of the principles of operation of the invention disclosed in Sandretto and destroy its ability to function. It is well known that when “*the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)*”. It is also well established that when a modification of a reference destroys the intent, purpose or function of an invention such a proposed modification is not proper and the *prima facie* cause of obviousness cannot be properly made (*In re Gordon* 733 F.2d 900, 221 U.S.P.Q. 1125 Fed Circuit 1984). Changes in operating principle required to enable Sandretto to replicate the functionality of the claimed invention include:

- 1) Sandretto teaches and relies on the principle that: the financial performance of each asset of a portfolio or firm is a known function of a plurality of economic variables and that a model of firm or portfolio value should be developed by adjusting the discount rate used to value each asset (see Sandretto, abstract and Column 9, L 20 through L 25). The Examiner has proposed modifying Sandretto to render obvious an invention that teaches and relies on the principle that the impact of an element of value on a firm is unknown and must be discovered by modeling and that after the impact is quantified it should be valued using a single discount rate based on the firm’s cost of capital. The Appellant notes that this modification would only be possible if the principles of operation of the Sandretto invention were changed to use almost the exact opposite approach (see Table below) and destroy its ability to function.

	Sandretto	09/761,670
Known parameter(s)	Asset financial performance as a function of economic variables	Discount rate
Unknown parameter(s)	Discount rate	Element of value impact

Because a change in the principles of the operation of Sandretto is required to enable the cited modification to replicate the functionality of the claimed inventions, the teachings of the document are not sufficient to render the claims *prima facie* obvious.

The Appellant notes that there are still other changes in the principle of operation of the inventions described by the cited document that would be required to replicate the claimed invention.

Reason #5 - The fifth reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 are patentable is that the assertions regarding the alleged obviousness of the rejected claims are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In *Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of PTO findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that discussion in the preceding paragraphs clearly shows that the instant Office Action fails to provide even a scintilla of evidence to support the allegation that the claims are obvious and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the obviousness rejection of claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 also fails to pass the arbitrary and capricious test because as detailed above under Reason #1, Reason # 2 and Reason # 4 the Examiner has provided substantial evidence that all the rejected claims are new, novel and non-obvious. Furthermore, there is no rational connection between the allowance and issue of patent 6,249,768 (hereinafter, Tulskie) and the rejection of the claims in the instant application for obviousness. Tulskie described a similar invention in an application with a priority date several years after the priority date of the above referenced application. The documented pattern of arbitrarily and capriciously issuing patents to large companies for inventions similar to those described in the earlier filed and rejected applications of the Appellant can also be observed in the related appeals for applications 08/999,245, 10/283,083,

10/743,417, 10/750,592 and 11/278,419.

Reason #6 - The selection of the Sandretto document alone and in combination with other references in an attempt to support an obviousness rejection provides substantial evidence that those authoring the January 3, 2007 Office Action for the instant application appear to lack the level of skill in the art required to author a rejection for obviousness, lack of utility and/or for an alleged written description deficiency. The latter statement was made because it is well established that the “hypothetical ‘person having ordinary skill in the art’ to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and engineering principles applicable to the pertinent art.” Ex parte Hiyamizu, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988). No one who understood the scientific and engineering principles applicable to the pertinent art would ever suggest Sandretto as a reference in an obviousness rejection for the claimed inventions (see Reason #1, Reason #2, Reason #3 and Reason #4 for Issue 1, Issue 2, Issue 3, Issue 4 and Issue 5). The documented pattern of citing prior art and/or using technical reasoning that provides evidence that those authoring the January 3, 2007 Office Action appear to lack an average level of skill in the pertinent arts can also be observed in the related appeals for applications 10/743,417, 10/750,792 and 11/278,419. The sixth reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78 and claim 79 are patentable is that there is no statutory basis for giving any weight to claim rejections for obviousness authored by individuals who have an apparent level of skill in the relevant arts that is not average or better.

Issue 2 - Whether claim 63 and claim 76 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Jost (U.S. Patent 5,361,201)?

The claims are patentable because the Sandretto and Jost documents fail to establish a prima facie case of obviousness, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - The first reason that claim 63 and claim 76 are patentable is that Sandretto and Jost fail to establish a prima facie case of obviousness because they do not teach or suggest one or more of the limitations for every rejected claim. *“When determining whether a claim is obvious, an examiner must make ‘a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, ‘obviousness requires a suggestion of all limitations in a claim.’ CFMT, Inc. v. Yieldup Intern. Corp.,*

349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)) and (*In re Wada and Murphy*, Appeal No. 2007- 3733). Limitations not taught or suggested by the cited prior art are detailed below:

a) Claim 63 and 76. Limitations not taught or suggested include:

- 1) evolving a plurality of network models for connecting one or more elements of value of a firm to one or more aspects of financial performance of said firm,
- 2) network models comprised of input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and
- 3) a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value, and/or
- 4) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing

Reason #2 – The second reason claim 63 and claim 76 are patentable is the Reason #2 listed under Issue #1.

Reason #3 - The third reason claim 63 and claim 76 are patentable is the fact that the Examiner has not been able to explain how or why the Sandretto invention would be combined with the Jost invention to replicate the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).’* In spite of this well known requirement, the Examiner has not explained how or why the combination of Sandretto and Jost should be made in spite of numerous reasonable requests that the Examiner provide such an explanation. The inability to explain how the teachings of two patents (that teach those of average skill in the art how to make and practice their inventions) should be combined provides additional evidence that the Examiner does not appear to possess the average level of skill in the art required to examine a patent application or author valid written description or claim rejections.

Reason #4 - The fourth reason claim 63 and claim 76 are patentable is Reason #4 listed under Issue #1. Furthermore, the proposed combination would also require a change in the principle of operation of the Jost invention which does not utilize genetic algorithms for neural network model training and development.

Reason #5 - The fifth reason claim 63 and claim 76 are patentable is Reason #5 listed under Issue #1.

Reason #6 - The sixth reason that claim 63 and claim 76 are patentable is Reason #6 listed under Issue #1.

Issue 3 - Whether claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

The claims are patentable because the Sandretto document fails to establish a prima facie case of obviousness, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - The first reason that claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is that Sandretto fails to establish a prima facie case of obviousness because it does not teach or suggest one or more of the limitations for every rejected claim. *"When determining whether a claim is obvious, an examiner must make 'a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.' In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, 'obviousness requires a suggestion of all limitations in a claim.' CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing In re Royka, 490 F.2d 981, 985 (CCPA 1974) and (In re Wada and Murphy, Appeal No. 2007- 3733)). Limitations not taught or suggested by the cited prior art are detailed below:*

a) Claim 80. Limitations and activities not taught or suggested include:

- 1) accessing a plurality of data representative of enterprise via an interface coupled to a plurality of data sources,
- 2) converting said data to a common schema using an application software segment,
- 3) data sources comprised of database management systems for a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system and combinations thereof, and/or
- 4) storing said converted data in a database for use in processing.

b) Claims 81. Limitations and activities not taught or suggested include:

- 1) a plurality of relational databases, and/or
- 2) a plurality of relational databases that use different data formats.

c) Claims 82. Limitations and activities not taught include:

- 1) an interface comprised of a network connection.

d) Claims 83. Limitations and activities not taught or suggested include:

- 1) a common network schema, and/or
 - 2) a common schema containing a common data dictionary.
- e) Claims 84. Limitations and activities not taught or suggested include:
- 1) completing a conversion and storage of data before processing begins;

Reason #2 – The second reason the claims are patentable is that Sandretto fails to establish a *prima facie* case of obviousness for claim 80, claim 81, claim 82, claim 83 and claim 84 by teaching away from all claimed methods and limitations. MPEP § 2141.02 states that: “*in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious.*” Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.* *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Examples of Sandretto teaching away from the claimed invention include:

- 1) Claim 80 (affects claim 81, claim 82, claim 83 and claim 84) describes the development of an integrated database from data obtained from a plurality of system databases by an application software segment.

Sandretto teaches away by teaching the use of a process that only requires the manual input of three types of data (see Sandretto, Column 9, L 45 through L 55). Two of the three required types of data input would not be found in the listed databases.

Reason #3 - The third reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is the fact that the Examiner has not been able to explain how or why the Sandretto invention would be modified to replicate the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).’* In spite of this well known requirement, the Examiner has not explained how or why modification of Sandretto should be made in spite of numerous reasonable requests that the Examiner provide such an explanation. This is particularly disturbing when one considers the fact that even after modifying Sandretto to replicate the claimed functionality, the Sandretto invention would still require the manual input of two of the three types of data required for processing.

Reason #4 - The fourth reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is

Reason #5 listed under Issue #1.

Reason #5 - The fifth reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is Reason #6 listed under Issue #1.

Issue 4 - Whether claim 85 is patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988)?

The claims are patentable because the Sandretto document fails to establish a prima facie case of obviousness, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - The first reason that claim 85 is patentable is that Sandretto fails to establish a prima facie case of obviousness because it does not teach or suggest one or more of the limitations for the rejected claim. *"When determining whether a claim is obvious, an examiner must make 'a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.'* *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, 'obviousness requires a suggestion of all limitations in a claim.' CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (*citing In re Royka*, 490 F.2d 981, 985 (CCPA 1974)) and (*In re Wada and Murphy*, Appeal No. 2007- 3733). Limitations not taught or suggested by the cited prior art are detailed below:

- a) Claim 85. Limitations not taught or suggested include:
 - 1) identifying a set of data required for analyzing a commercial enterprise,
 - 2) preparing the identified set of data for use in analysis,
 - 3) analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof, and/or
 - 4) using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning

Reason #2 – The second reason the claims are patentable is that Sandretto fails to establish a prima facie case of obviousness for claim 85 by teaching away from all claimed methods and limitations. MPEP § 2141.02 states that: *"in determining the difference between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious but whether the claimed invention as a whole would have been obvious."* Furthermore, it is well established that: *A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.* *W.L. Gore &*

Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Examples of Sandretto teaching away from the claimed invention include:

1) Claim 85 (affects claim 86) describes the preparing data for analysis and developing a model of enterprise current operation financial performance using automated learning.

Sandretto teaches away by teaching and relying on the use risk return models that are prepared and input by the user for financial performance modeling (see Sandretto, Column 9, L 45 through L 55).

2) Claim 85 (affects claim 86) describes the transformation of data representative of a business operation and its elements of value into a model of current operation financial performance that has utility in business forecasting and performance management.

Sandretto teaches away by teaching the use of an iterative process that manipulates a model that was input by a user and does not have the ability to transform data into a model (see Sandretto, Column 3, L 21 through L 25).

3) Claim 85 (affects claim 86) describes the transformation of data representative of a business operation and its elements of value into a model without adjusting any input variable values.

Sandretto teaches away by teaching a method that relies exclusively on the adjustment of input variable values in order to back-fit the value of a plurality of items to a known portfolio value.

4) Claim 85 (affects claim 86) describes a model development method that uses a best fit model to identify the previously unknown impact of an element of value on a firm.

Sandretto teaches away by teaching that the financial performance of each asset of a firm or portfolio is a known function of economic variables (see Sandretto, abstract and Column 9, L 20 through L 25).

5) Claim 85 (affects claim 86) describes a model development method that does not rely on any assumptions about market efficiency.

Sandretto teaches away by teaching an analysis method that relies on the efficient market hypothesis (see Sandretto, Column 9, L 54 through L 60).

6) Claim 85 (affects claim 86) describes the use of a model for completing an element of value level analysis of firm performance. Elements of value are comprised of a plurality of items that are grouped together for modeling, analysis and management.

Sandretto teaches away by teaching the item (i.e. asset) level analysis of the value of a portfolio or firm (see Sandretto, C10, L 1 through L15). Jost and Barr also teach item level analysis.

7) Claim 85 (affects claim 86) describes the use of a model of current operation financial performance to model the impact of one or more elements of value on the financial performance of a firm. Elements of value include brands, customers and employees.

Sandretto teaches away by teaching that economic variables determine the performance of a firm and/or a portfolio of assets (see Sandretto, abstract, Column 3, L 8 through L 11).

8) The claimed invention (affects all claims) teaches and relies on the fact that there are at least three ways to increase the value of a business: increase the value of the elements of value, increase the value of growth options and increase the value of business cash flow.

Sandretto teaches away by teaching that there is only one way increase value, increase the value of cash flow from assets.

Reason #3 - The third reason claim 85 is patentable is the fact that the Examiner has not been able to explain how or why the Sandretto invention would be modified to replicate the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).’* In spite of this well known requirement, the Examiner has not explained how or why modification of Sandretto should be made in spite of numerous reasonable requests that the Examiner provide such an explanation. This is particularly disturbing when one considers the fact that modifying Sandretto to replicate the claimed functionality would require Sandretto invention to develop a model using automated learning in place of the reliance on the manual input of a model taught in the specification (see Sandretto, Column 9, L 45 through L 55).

Reason #4 - The fourth reason the claim is patentable is that the cited document fails to establish a *prima facie* case of obviousness for claim 85 because the unspecified modification would have to change one or more of the principles of operation of the invention disclosed in Sandretto. MPEP 2143.01 provides that when “*the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)*”. Changes in operating principle required to enable Sandretto to replicate the functionality of the claimed invention include modifying Sandretto to replicate the claimed functionality would require the Sandretto invention to develop a model using automated learning in place of the use of models manually input by the user.

Reason #5 - The fifth reason claim 85 is patentable is Reason #5 listed under Issue #1.

Reason #6 - The sixth reason that claim 85 is patentable is Reason #6 listed under Issue #1.

Issue 5 - Whether claim 51 and claim 86 are patentable under 35 U.S.C. 103(a) over Sandretto (U.S. Patent 5,812,988) in view of Barr (U.S. Patent 5,761,442)?

The claims are patentable because the Sandretto and Barr documents fail to establish a prima facie case of obviousness, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - The first reason that claim 51 and claim 86 are patentable is that Sandretto and Barr fail to establish a prima facie case of obviousness because they do not teach or suggest one or more of the limitations for every rejected claim. *"When determining whether a claim is obvious, an examiner must make 'a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.'* *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995). Thus, 'obviousness requires a suggestion of all limitations in a claim.' CFMT, Inc. v. Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) (citing *In re Royka*, 490 F.2d 981, 985 (CCPA 1974)) and (*In re Wada and Murphy*, Appeal No. 2007- 3733). Limitations not taught or suggested by the cited prior art are detailed below:

a) Claim 51. Limitations not taught or suggested include:

- 1) evolving a plurality of network models for connecting one or more elements of value of a firm to one or more aspects of financial performance of said firm,
- 2) network models comprised of input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and
- 3) a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value, and/or
- 4) where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing

b) Claim 86. Limitations not taught or suggested include:

- 1) identifying a set of data required for analyzing a commercial enterprise,
- 2) preparing the identified set of data for use in analysis,
- 3) analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance and combinations thereof,
- 4) using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning,
- 5) fitness measure re-scaling,
- 6) random mutation,

- 7) recalibrating target fitness levels,
- 8) selective crossover, and/or
- 9) selective carry-forward.

Reason #2 – The second reason claim 51 is patentable is Reason #2 listed under Issue #1. The second reason claim 86 is patentable is Reason #2 listed under Issue #4.

Reason #3 - The third reason claim 51 and claim 86 are patentable is the fact that the Examiner has not been able to explain how or why the Sandretto invention would be combined with the Barr invention to replicate the claimed invention. *The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting In re Kahn 41 stated that “[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness (KSR, 550 U.S. at I, 82 USPQ2d at 1396).’* In spite of this well known requirement, the Examiner has not explained how or why the combination of Sandretto and Barr should be made in spite of numerous reasonable requests that the Examiner provide such an explanation. The inability to explain how the teachings of two patents (that teach those of average skill in the art how to make and practice their inventions) should be combined provides evidence that the Examiner does not appear to possess the average level of skill in the art required to examine a patent application or author valid written description or claim rejections.

Reason #4 - The fourth reason claim 51 is patentable is Reason #4 listed under Issue #1. The fourth reason claim 86 is patentable is Reason #4 listed under issue #4.

Reason #5 - The fifth reason claim 51 and claim 86 are patentable is Reason #5 listed under Issue #1.

Reason #6 - The sixth reason that claim 51 and claim 86 are patentable is Reason #6 listed under Issue #1.

Issue 6 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and/or claim 86 are enabled under 35 U.S.C. 112, first paragraph?

The claims are patentable because the arguments in the fail to establish a prima facie case of a lack of enablement, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - The first reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and/or claim 86 are patentable is that the Examiner has failed to establish a *prima facie* case that the specification does meet the enablement requirements of §112 first paragraph. “*A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption.* See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). *The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims.* *Wertheim*, 541 F.2d at 263, 191 USPQ at 97. In rejecting a claim, the examiner must set forth express findings of fact regarding the above analysis which support the lack of written description conclusion. These findings should:(A) Identify the claim limitation at issue; and (B) Establish a *prima facie* case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. A general allegation of “unpredictability in the art” is not a sufficient reason to support a rejection for lack of adequate written description.” The arguments presented in the January 3, 2007 Office Action fail to establish the *prima facie* case required to sustain a §112 first paragraph rejection for a single claim in at least three ways:

1. No claim limitation(s) at issue have been identified. The Examiner has expressed vague concerns regarding the specification but no specific claim limitations have been identified as being at issue;
2. No evidence has been presented. As noted above, rejection under §112 first paragraph requires a preponderance of evidence and express findings of fact. In spite of this well known requirement, no facts have been identified and no evidence has been presented about a specific concern regarding the specification; and
3. Relevant evidence has been ignored. Evidence that the Examiner has apparently ignored includes:
 - a) the summary of claimed subject matter; and
 - b) the declaration submitted in support of this application, the declaration represents the only known independent review of the patent specification by an individual with an average skill in the relevant arts under either the pre or post KSR standards for

determining the possession of said level of skill.

Although the expert providing the declaration has considerable expertise in the development of network models of real world entities, the Examiner has chosen to ignore this declaration which states “*...I have concluded that it would be straightforward for anyone to duplicate the system for evaluating cash flow and elements of a business enterprise as claimed using the information in U.S. Patent Application 09/761,670 together with the patent it cross-references*” (see pages 57 - 59, Evidence Appendix).

Since the prima facie case to support the claim rejections has not been established, no rebuttal was (or is) required.

Reason #2 - The second reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and claim 86 are patentable is that the assertions regarding the alleged lack of enablement in the written description are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. In Dickinson v. Zurko, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of PTO findings are the standards set forth in the Administrative Procedure Act ("APA") at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that the arguments presented in the January 3, 2007 Office Action fail to meet both standards. As detailed under Reason #1, these arguments fail under the substantial evidence standard because vague allegations do not constitute evidence of a written description deficiency. The Appellant respectfully submits that the arguments presented in the January 3, 2007 Office Action also fail under the arbitrary and capricious standard. There are several reasons that the written description rejections presented in the January 3, 2007 Office Action fail under this standard:

- 1) there is no rational connection between the agency's findings that the Tulskie invention that relies on subjective data in a subjectively determined network structure to reach subjectively determined results (see Evidence Appendix, page 67) has an adequate written description and the written description rejection of this application where each step for producing concrete results is clearly described;
- 2) there is no rational connection between the decision to allow this Examiner to author a written description rejection and the agency's fact-findings for the instant application that have documented the fact that the Examiner:
 - a) has been unable to explain how or why a single combination of the cited prior art should be made,

- b) has made several consecutive, unsuccessful attempts to identify a proper combination of prior art to support rejections for obviousness,
 - c) has been unable to explain how or why a single modification of the cited prior art should be made, and
 - d) does not appear to have the capability of understanding the scientific and engineering principles applicable to the pertinent art.
- 3) there is no rational connection between the decision to allow this Examiner to author a written description rejection for the instant application and the agency's fact-findings for related appeals 10/743,417, 10/750,792 and 11/278,419 that have documented the fact that the Examiner does not appear to have the capability of understanding the scientific and engineering principles applicable to a variety of pertinent arts including: mathematical modeling, networks, value analysis, value management and/or value optimization and that the Examiner has found Appellant's methods to be subjective even when they are clearly more objective than very similar methods detailed in allowed patents for large companies.

In short, because there is no rational connection between the agency's prior fact-findings and the claim rejections, the written description rejection for the listed claims would also fail under the arbitrary and capricious standard.

Reason #3 - The third reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 64, claim 65, claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 77, claim 78, claim 79, claim 80, claim 81, claim 82, claim 83, claim 84, claim 85 and/or claim 86 are patentable is that there is no statutory basis for giving any weight to claim rejections for a lack of enablement or written description that are authored by individuals and/or an organization who do not appear to have a level of skill in the relevant arts that is average or better. The preceding statement was made for a variety of reasons including the fact that the Examiner rejected the most stable known neural network model development method for being unstable. 3,600 patents have been issued for neural network model development methods that are less stable than the one described in the instant application. No one who understood the scientific and engineering principles applicable to the pertinent art would ever suggest that the claimed model development is unstable (see Evidence Appendix, pages 63 and 64). It is well established that the "hypothetical 'person having ordinary skill in the art' to which the claimed subject matter pertains would, of necessity have the capability of understanding the scientific and engineering principles applicable to the pertinent art." Ex parte Hiyamizu, 10 USPQ2d 1393, 1394 (Bd. Pat. App. & Inter. 1988).

Issue 7 - Whether the invention described in claim 43, claim 44, claim 45, claim 46, claim 48,

claim 49, claim 50, claim 51 and claim 52 represents patentable subject matter under 35 U.S.C. 101?

The Appellant respectfully traverses the rejections for non statutory subject matter and a lack of utility in three ways. First, by noting that the January 3, 2007 Office Action has failed to establish a prima facie case of non-statutory subject matter/lack of utility. Second, by noting that the rejections fail under both standards of the APA. Third, by noting that the claimed inventions clearly meet the legal requirements for statutory subject matter.

Reason #1 - The first reason claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the Examiner has failed to establish a prima facie case that any of the claims are directed to non-statutory subject matter. As noted in MPEP 2106 "*the burden is on the USPTO to set forth a prima facie case of unpatentability. Therefore if USPTO personnel determine that it is more likely than not that the claimed subject matter falls outside all of the statutory categories, they must provide an explanation.*(See, e.g., *In re Nuitjen*, Docket no. 2006-1371 (Fed. Cir. Sept. 20, 2007)(slip. op. at 18)). In spite of this well known requirement, the Examiner has made unsupported conclusions regarding patentability without providing the required explanation. In particular the Examiner has failed to explain why the claims are non statutory after considering the fact that the Supreme Court has specifically stated "*[a] process may be patentable irrespective of the particular form of the instrumentalities used*" (*Cochrane v. Deener*, 94 U. S. 780) and in light of the fact that the Supreme Court and the CAFC (Bilski) have both found the transformation of data regarding real world activities and/or objects into a different state or thing to be statutory subject matter. In short, the complete absence of an explanation leads to the inevitable conclusion that the Examiner has failed to establish a prima facie case that would support a §101 rejection for a single claim.

Reason # 2. The second reason claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 are patentable is that the Examiner has failed to establish a prima facie case that any of the claims lack utility and/or that subjective judgments are required to operate the claimed invention. MPEP 2164.07 states "*the examiner has the initial burden of challenging an asserted utility. Only after the examiner has provided evidence showing that one of ordinary skill in the art would reasonably doubt the asserted utility does the burden shift to the applicant to provide rebuttal evidence sufficient to convince one of ordinary skill in the art of the invention's asserted utility.* *In re Brana*, 51 F.3d 1560, 1566, 34 USPQ2d 1436, 1441 (Fed. Cir. 1995) (citing *In re Bundy*, 642 F.2d 430, 433, 209 USPQ 48, 51 (CCPA 1981)). Given the complete absence of evidence to support the assertion of a lack of utility, the Appellant respectfully submits that the Examiner has failed to establish the required prima facie cause of a lack of utility for the rejected

claims. This is particularly true when one considers that it is well established that “*an applicant's assertion of utility creates a presumption of utility that will generally be sufficient to satisfy the utility requirement of 35 U.S.C. 101*. See, e.g., *In re Jolles*, 628 F.2d 1322, 206 USPQ 885 (CCPA 1980); *In re Irons*, 340 F.2d 974, 144 USPQ 351 (CCPA 1965); *In re Langer*, 503 F.2d 1380, 183 USPQ 288 (CCPA 1974); *In re Sichert*, 566 F.2d 1154, 1159, 196 USPQ 209, 212-13 (CCPA 1977).” As detailed in the summary of claimed subject matter, the specification clearly identifies the fact that the claimed invention has utility in completing forecasts, analyzing business performance and simulating the impact of changes to the business.

Reason #3 - The third reason the claims are patentable is that the claim rejections are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. *In Dickinson v. Zurko*, 119 S. Ct. 1816, 50 USPQ2d 1930 (1999), the Supreme Court held that the appropriate standard of review of U.S.P.T.O. findings of fact are the standards set forth in the Administrative Procedure Act (“APA”) at 5 U.S.C. 706 (1994). The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that as discussed under Reason #1, the Office Action used to support the claim rejections fails to provide even a scintilla of evidence to support the allegations of non utility it contains and that as a result it fails to meet the substantial evidence standard. The Appellant respectfully submits that the Office Action used to support the claim rejections also fails to pass the arbitrary and capricious test. Under the arbitrary and capricious test a reviewing court analyzes whether a rational connection exists between the agency's fact findings and its ultimate action, (see *Hyundai Elecs. Indus. Co. v. ITC*, 899 F.2d 1204, 1209, 14 USPQ2d 1396, 1400 (Fed. Cir. 1990)). The Appellant respectfully submits that the claim rejections also fail to pass the arbitrary and capricious test because there is no rational connection between the agency's fact findings in Tulskie and the claim rejections. The documented pattern of arbitrarily and capriciously rejecting the Appellant's claims that are similar to the claims in patents issued to large companies for allegedly being non-statutory and/or lacking utility can also be observed in related appeals for applications 10/743,417, 10/750,792 and 11/278,419.

Reason #4 – The fourth reason claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51 and claim 52 patentable is that the claimed invention is a machine that transform data representative of things that physically exist (i.e. a business, customers, vendors, etc.) into a different state or thing: a model of business financial performance. The model has utility in completing forecasts, analyzing business performance and simulating the impact of changes to the business. As discussed in detail in the summary of claimed subject matter, the transformation of

data into a model comes after data representative of the business has been transformed into an integrated database. As noted in the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility *"the Supreme Court noted that one example of a statutory "process" is where the process steps provide a transformation or reduction of an article to a different state or thing (Diehr, 450 U.S. at 183, 209 USPQ at 6)*. In Alappat, the Court held that *"data, transformed by a machine" "to produce a smooth waveform display" "constituted a practical application of an abstract idea."* State Street, 149 F.3d at 1373. In Arrhythmia, the Court held *"the transformation of electrocardiograph signals" "by a machine" "constituted a practical application of an abstract idea."* *Id.* Likewise, in State Street, the Court held that *"the transformation of data" "by a machine" "into a final share price, constitutes a practical application of a mathematical algorithm."* *Id.* Thus, while Diehr involved the transformation of a tangible object - curing synthetic rubber - the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data represent some real world activity. In re Bilski, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008) generally follows these prior decisions and states that the data must represent an object or substance that physically exists.

The Appellant respectfully submits that the preceding discussion makes it clear that the claimed invention passes the transformation test and that the claims describe a machine that supports a number of practical application with substantial, specific utility and is therefore statutory subject matter.

Issue 8 - Whether the invention described in claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 represents patentable subject matter under 35 U.S.C. 101?

The Appellant respectfully traverses the rejections for non statutory subject matter in three ways. First, by noting that the January 3, 2007 Office Action has failed to establish a *prima facie* case of non-statutory subject matter. Second, by noting that the rejections fail under both standards of the APA. Third, by noting that the claimed inventions clearly meet the legal requirements for statutory subject matter.

Reason #1 - The first reason claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 are patentable is Reason #1 listed under Issue #7.

Reason #2 - The second reason claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 are patentable is Reason #2 listed under Issue #7.

Reason #3 - The third reason claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 are patentable is Reason #3 listed under Issue #7.

Reason #4 – The fourth reason claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66 are patentable is that the claimed invention is a process that transform data representative of things that physically exist (i.e. a business, customers, vendors, etc.) into a different state or thing: a model of business financial performance. The model has utility in completing forecasts, analyzing business performance and simulating the impact of changes to the business. As discussed in detail in the summary of claimed subject matter, the transformation of data into a model comes after data representative of the business has been transformed into an integrated database. As noted in the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility “*the Supreme Court noted that one example of a statutory “process” is where the process steps provide a transformation or reduction of an article to a different state or thing (Diehr, 450 U.S. at 183, 209 USPQ at 6).* In Alappat, the Court held that “*data, transformed by a machine*” “*to produce a smooth waveform display*” “*constituted a practical application of an abstract idea.*” State Street, 149 F.3d at 1373. In Arrhythmia, the Court held “*the transformation of electrocardiograph signals*” “*by a machine*” “*constituted a practical application of an abstract idea.*” *Id.* Likewise, in State Street, the Court held that “*the transformation of data*” “*by a machine*” “*into a final share price, constitutes a practical application of a mathematical algorithm.*” *Id.* Thus, while Diehr involved the transformation of a tangible object - curing synthetic rubber - the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data represent some real world activity. In re Bilski, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008) generally follows these prior decisions and states that the data must represent an object or substance that physically exists.

The Appellant respectfully submits that the preceding discussion makes it clear that the claimed invention passes the transformation test and that the claims describe a process that supports a number of practical application with substantial, specific utility and is therefore statutory subject matter.

Issue 9 - Whether the invention described in claims claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 represents patentable subject matter under 35 U.S.C. 101?

The Appellant respectfully traverses the rejections for non statutory subject matter in three ways.

First, by noting that the January 3, 2007 Office Action has failed to establish a prima facie case of non-statutory subject matter. Second, by noting that the rejections fail under both standards of the APA. Third, by noting that the claimed inventions clearly meet the legal requirements for statutory subject matter.

Reason #1 - The first reason claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are patentable is Reason #1 listed under Issue #7.

Reason #2 - The second reason claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are patentable is Reason #2 listed under Issue #7.

Reason #3 - The third reason claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are patentable is Reason #3 listed under Issue #7.

Reason #4 – The fourth reason claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are patentable is that the claimed invention is an article of manufacture that transforms data representative of things that physically exist (i.e. a business, customers, vendors, etc.) into a different state or thing: a model of business financial performance. The model has utility in completing forecasts, analyzing business performance and simulating the impact of changes to the business. As discussed in detail in the summary of claimed subject matter, the transformation of data into a model comes after data representative of the business has been transformed into an integrated database. As noted in the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility “*the Supreme Court noted that one example of a statutory “process” is where the process steps provide a transformation or reduction of an article to a different state or thing (Diehr, 450 U.S. at 183, 209 USPQ at 6).* In Alappat, the Court held that “*data, transformed by a machine*” “*to produce a smooth waveform display*” “*constituted a practical application of an abstract idea.*” *State Street, 149 F.3d at 1373.* In Arrhythmia, the Court held “*the transformation of electrocardiograph signals*” “*by a machine*” “*constituted a practical application of an abstract idea.*” *Id.* Likewise, in State Street, the Court held that “*the transformation of data*” “*by a machine*” “*into a final share price, constitutes a practical application of a mathematical algorithm.*” *Id.* Thus, while Diehr involved the transformation of a tangible object - curing synthetic rubber - the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data represent some real world activity. In re Bilski, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008) generally follows these

prior decisions and states that the data must represent an object or substance that physically exists.

The Appellant respectfully submits that the preceding discussion makes it clear that the claimed invention passes the transformation test and that the claims describe an article of manufacture that supports a number of practical application with substantial, specific utility and is therefore statutory subject matter.

Issue 10 - Whether the invention described in claim 80, claim 81, claim 82, claim 83 and claim 84 represents patentable subject matter under 35 U.S.C. 101?

The Appellant respectfully traverses the rejections for non statutory subject matter in three ways. First, by noting that the January 3, 2007 Office Action has failed to establish a *prima facie* case of non-statutory subject matter. Second, by noting that the rejections fail under both standards of the APA. Third, by noting that the claimed inventions clearly meet the legal requirements for statutory subject matter.

Reason #1 - The first reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is Reason #1 listed under Issue #7.

Reason #2 - The second reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is Reason #2 listed under Issue #7.

Reason #3 - The third reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is Reason #3 listed under Issue #7.

Reason #4 – The fourth reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is that the claimed invention is a process that transforms data representative of things that physically exist (i.e. a business) into a different state or thing: an integrated database. The database has utility in enabling the completion of forecasts, the analysis of business performance and simulating the impact of changes to the business. As noted in the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility "*the Supreme Court noted that one example of a statutory "process" is where the process steps provide a transformation or reduction of an article to a different state or thing (Diehr, 450 U.S. at 183, 209 USPQ at 6).* In Alappat, the Court held that "*data, transformed by a machine*" "*to produce a smooth waveform display*" "*constituted a practical application of an abstract idea.*" *State Street, 149 F.3d at 1373.* In Arrhythmia, the Court held "*the transformation of electrocardiograph signals*" "*by a machine*" "*constituted a practical application of an abstract idea.*" *Id.* Likewise, in State Street, the Court held that "*the transformation of data*" "*by a machine*" "*into a final share price, constitutes a practical*

application of a mathematical algorithm." *Id.* Thus, while Diehr involved the transformation of a tangible object - curing synthetic rubber - the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data represent some real world activity. In re Bilski, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008) generally follows these prior decisions and states that the data must represent an object or substance that physically exists.

The Appellant respectfully submits that the preceding discussion makes it clear that the claimed invention passes the transformation test and that the claims describe a process that supports a number of practical application with substantial, specific utility and is therefore statutory subject matter.

Issue 11 - Whether the invention described in claim 85 and claim 86 represents patentable subject matter under 35 U.S.C. 101?

The Appellant respectfully traverses the rejections for non statutory subject matter in three ways. First, by noting that the January 3, 2007 Office Action has failed to establish a *prima facie* case of non-statutory subject matter. Second, by noting that the rejections fail under both standards of the APA. Third, by noting that the claimed inventions clearly meet the legal requirements for statutory subject matter.

Reason #1 - The first reason claim 85 and claim 86 are patentable is Reason #1 listed under Issue #7.

Reason #2 - The second reason claim 85 and claim 86 are patentable is Reason #2 listed under Issue #7.

Reason #3 - The third reason claim 85 and claim 86 are patentable is Reason #3 listed under Issue #7.

Reason #4 – The fourth reason claim 85 and claim 86 are patentable is that the claimed invention is a process that transforms data representative of things that physically exist (i.e. a business, customers, vendors, etc.) into a different state or thing: a model of business financial performance. The model has utility in completing forecasts, analyzing business performance and simulating the impact of changes to the business. As discussed in detail in the summary of claimed subject matter, the transformation of data into a model comes after data representative of the business has been transformed into an integrated database. As noted in the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility "*the Supreme Court noted that one example of a statutory "process" is where the process steps provide a transformation or reduction of an article to a different state or thing (Diehr, 450 U.S. at 183, 209 USPQ at 6).* In Alappat, the

Court held that "*data, transformed by a machine*" "*to produce a smooth waveform display*" "*constituted a practical application of an abstract idea.*" *State Street*, 149 F.3d at 1373. In *Arrhythmia*, the Court held "*the transformation of electrocardiograph signals*" "*by a machine*" "*constituted a practical application of an abstract idea.*" *Id.* Likewise, in *State Street*, the Court held that "*the transformation of data*" "*by a machine*" "*into a final share price, constitutes a practical application of a mathematical algorithm.*" *Id.* Thus, while *Diehr* involved the transformation of a tangible object - curing synthetic rubber - the Court also regards the transformation of intangible subject matter to similarly be eligible, so long as data represent some real world activity. *In re Bilski*, 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008) generally follows these prior decisions and states that the data must represent an object or substance that physically exists.

The Appellant respectfully submits that the preceding discussion makes it clear that the claimed invention passes the transformation test and that the claims describe a process that supports a number of practical application with substantial, specific utility and is therefore statutory subject matter.

Issue 12 - Whether claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are indefinite under 35 U.S.C. 112, second paragraph?

The claims are patentable because the January 3, 2007 Office Actions fails to establish a prima facie case that the claims are indefinite, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - As mentioned previously, the first reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79, are patentable is that the Examiner has failed to establish a prima facie case that the claims are indefinite under §112 second paragraph. MPEP 2173.02 states that: *definiteness of claim language must be analyzed, not in a vacuum, but in light of:*

- (A) *The content of the particular application disclosure;*
- (B) *The teachings of the prior art; and*
- (C) *The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.*

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also In re Larsen, No. 01-1092 (Fed. Cir. May 9, 2001). The arguments presented in the January 3, 2007 Office Action fail to establish the prima facie case required to sustain a §112 second paragraph rejection in at least four ways:

1. By failing to establish that the rejected claims meet any of the well established criteria for indefiniteness. Specifically, the rejected claims do not: (1) recite a means-plus-function limitation without disclosing corresponding structure in the specification; (2) include a numeric limitation without disclosing which of multiple methods of measuring that number should be used; (3) contain a term that is completely dependent on a person's subjective opinion, and/or (4) contain a term does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable (Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1255, 85 USPQ2d 1663 (Fed. Cir. 2008) and Halliburton, 514 F.3d at 1246, 85 USPQ2d at 1658 (Citing Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 950 (Fed. Cir, 2007)).
2. By failing to consider the teachings of the prior art. A review of the prior art shows that the description of the network models in the rejected independent claims (43, 54 and 67) mirrors the formal, mathematical definition of a network as shown below:

More formally, a network contains a set of objects (in mathematical terms, nodes) and a mapping or description of relations between the objects or nodes. The simplest network contains two objects, 1 and 2, and one relationship that links them."

The formal network definition was previously provided by the Appellant (see page 65, Evidence Appendix). Given these facts, it is unreasonable to state that anyone of average skill in the art of mathematical modeling would be confused by the language in the rejected, independent claims. Furthermore, because the dependent claims serve only to add limitations or structure to these network model claims it is also unreasonable to assert that there would be any confusion regarding their scope.

3. By failing to consider the content of the application disclosure. The metes and bounds of the claims are clearly defined by the specification.
4. By failing to consider the claim interpretation by one possessing the ordinary or average skill in the pertinent art. The relevant Office Action does not contain any evidence that a person of ordinary skill in the pertinent arts would have any confusion about the scope of any of the claims. As described above, it does contain substantial evidence that those authoring the claim rejections do not have an ordinary or average level of skill in the pertinent arts.

The declaration under rule 132 (see Evidence Appendix, pages 57 - 59) does provide the

opinion of someone possessing the ordinary or average skill in the pertinent art and it completely rebuts the claim rejections: “*U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes: 1) A framework system (claim 43 and associated claims 44-46 and 48-52); 2) A firm analysis method (claim 54 and associated claims 55-66); 3) A computer readable media for firm analysis (claim 67 and associated claims 68-79)*”

As part of these claim rejections the examiner has stated that claim 54 is a single step claim and that claims 52, 65 and 78 lack antecedent basis. A simple review of the claims shows that both of these assertions have no merit.

Reason #2 - The second reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are patentable is that the assertions regarding the alleged indefiniteness of the claims are not in compliance with the requirements of the Administrative Procedures Act and are therefore moot. The APA provides two standards for review – an arbitrary and capricious standard and a substantial evidence standard. The Appellant respectfully submits that the arguments presented in the January 3, 2007 Office Action fail to meet both standards. As detailed under Reason #1, the arguments presented in the January 3, 2007 Office Action fail under the substantial evidence standard.

The Appellant also respectfully submits that a review of the prosecution history of the instant application and similar patents makes it clear that any reliance on the §112 second paragraph rejections presented in the January 3, 2007 Office Action would also fail under the second standard of the APA – the arbitrary and capricious standard. Under that standard, the reviewing court analyzes whether a rational connection exists between the agency's factfindings and its ultimate action. In particular, there is no rational connection between the agency's findings that claim 6 for Tulskie (an invention that relies on subjective data in a subjectively determined network structure to reach subjectively determined results) is definite:

6. A method for analyzing a firm, comprising the steps of: generating a strategic capability network which connects present resources of said firm through present capabilities of said firm to present value propositions of said firm, said strategic capability network having nodes and relationships between said nodes, each said node being a capability, a resource or a strategic position, each said relationship being directional and being characterized by a degree of support from a supporting one of said nodes to a supported one of said nodes, said degree of support being dependent upon said present resources, said present capabilities and said present value propositions;

and the rejection of claim 54 for allegedly being indefinite

54. A firm analysis method, comprising:
aggregating firm related data from a plurality of systems in accordance with a common data dictionary
using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:
one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance, and
a plurality of relationships where each relationship is a function of an impact of each element on other elements of value or an aspect of financial performance;

The documented pattern of arbitrarily and capriciously rejecting claims in the Appellant's applications for being indefinite when the claims are similar to claims contained in large company patents issued from later filed applications can also be observed in the related appeals for applications 10/743,417, 10/750,792 and 11/278,419.

Reason #3 - The third reason that claim 43, claim 44, claim 45, claim 46, claim 48, claim 49, claim 50, claim 51, claim 52, claim 54, claim 55, claim 56, claim 57, claim 58, claim 59, claim 60, claim 61, claim 62, claim 63, claim 64, claim 65 and claim 66, claim 67, claim 68, claim 69, claim 70, claim 71, claim 72, claim 73, claim 74, claim 75, claim 76, claim 77, claim 78 and claim 79 are patentable is that there is no statutory basis for giving any weight to claim rejections for an alleged lack of written description that are authored by individuals who do not appear to have a level of skill in the relevant arts that is average or better.

Issue 13 - Whether claim 80, claim 81, claim 82, claim 83 and/or claim 84 are indefinite under 35 U.S.C. 112, second paragraph?

The claims are patentable because the January 3, 2007 Office Actions fails to establish a prima facie case that the claims are indefinite, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - As mentioned previously, the first reason that claim 80, claim 81, claim 82, claim 83 and/or claim 84 are patentable is that the Examiner has failed to establish a prima facie case that the claims are indefinite under §112 second paragraph. MPEP 2173.02 states that: *definiteness of claim language must be analyzed, not in a vacuum, but in light of:*

- (A) *The content of the particular application disclosure;*
- (B) *The teachings of the prior art; and*
- (C) *The claim interpretation that would be given by one possessing the ordinary level of skill*

in the pertinent art at the time the invention was made.

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also In re Larsen, No. 01-1092 (Fed. Cir. May 9, 2001). The arguments presented in the January 3, 2007 Office Action fail to establish the prima facie case required to sustain a §112 second paragraph rejection in at least four ways:

1. By failing to establish that the rejected claims meet any of the well established criteria for indefiniteness. Specifically, the rejected claims do not: (1) recite a means-plus-function limitation without disclosing corresponding structure in the specification; (2) include a numeric limitation without disclosing which of multiple methods of measuring that number should be used; (3) contain a term that is completely dependent on a person's subjective opinion, and/or (4) contain a term does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable (Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1255, 85 USPQ2d 1663 (Fed. Cir. 2008) and Halliburton, 514 F.3d at 1246, 85 USPQ2d at 1658 (Citing Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 950 (Fed. Cir. 2007)).
2. By failing to consider the teachings of the prior art. The terms used in the rejected claims have well recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence. Bancorp Services, L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004).
3. By failing to consider the content of the application disclosure. The metes and bounds of the claims are clearly defined by the specification.
4. By failing to consider the claim interpretation by one possessing the ordinary or average skill in the pertinent art. The relevant Office Action does not contain any evidence that a person of ordinary skill in the pertinent arts would have any confusion about the scope of any of the claims. As described above, it does contain substantial evidence that those authoring the claim rejections do not have an ordinary or average level of skill in the pertinent arts.

The declaration under rule 132 (see Evidence Appendix, pages 57 – 59) does provide the opinion of someone possessing the ordinary or average skill in the pertinent art and it completely rebuts the claim rejections: “*U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes: 4) An enterprise data integration method (claim 80 and associated claims 81-84;* “

Reason #2 - The first reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is Reason #2 listed under Issue #12.

Reason #3 - The third reason claim 80, claim 81, claim 82, claim 83 and claim 84 are patentable is Reason #3 listed under Issue #12.

Issue 14 - Whether claim 85 and/or claim 86 are indefinite under 35 U.S.C. 112, second paragraph?

The claims are patentable because the January 3, 2007 Office Actions fails to establish a prima facie case that the claims are indefinite, because the claim rejections fail to meet the requirements of the APA and because the claim rejections are non statutory.

Reason #1 - As mentioned previously, the first reason that claim 85 and/or claim 86 are patentable is that the Examiner has failed to establish a prima facie case that the claims are indefinite under §112 second paragraph. MPEP 2173.02 states that: *definiteness of claim language must be analyzed, not in a vacuum, but in light of:*

- (A) *The content of the particular application disclosure;*
- (B) *The teachings of the prior art; and*
- (C) *The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.*

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). See also In re Larsen, No. 01-1092 (Fed. Cir. May 9, 2001). The arguments presented in the January 3, 2007 Office Action fail to establish the prima facie case required to sustain a §112 second paragraph rejection in at least four ways:

1. By failing to establish that the rejected claims meet any of the well established criteria for indefiniteness. Specifically, the rejected claims do not: (1) recite a means-plus-function limitation without disclosing corresponding structure in the specification; (2) include a numeric limitation without disclosing which of multiple methods of measuring that number should be used; (3) contain a term that is completely dependent on a person's subjective opinion, and/or (4) contain a term does not have proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable (Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1255, 85 USPQ2d 1663 (Fed. Cir. 2008) and Halliburton, 514 F.3d at 1246, 85 USPQ2d at 1658 (Citing Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 950 (Fed. Cir. 2007)).

2. By failing to consider the teachings of the prior art. The terms used in the rejected claims

have well recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence.” Bancorp Services, L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1372, 69 USPQ2d 1996, 1999-2000 (Fed. Cir. 2004).

3. By failing to consider the content of the application disclosure. The metes and bounds of the claims are clearly defined by the specification.

4. By failing to consider the claim interpretation by one possessing the ordinary or average skill in the pertinent art. The relevant Office Action does not contain any evidence that a person of ordinary skill in the pertinent arts would have any confusion about the scope of any of the claims. As described above, it does contain substantial evidence that those authoring the claim rejections do not have an ordinary or average level of skill in the pertinent arts.

The declaration under rule 132 (see Evidence Appendix, pages 57 - 59) does provide the opinion of someone possessing the ordinary or average skill in the pertinent art and it completely rebuts the claim rejections: “*U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes: 4) An intelligent method for analyzing commerce data using a computer (claim 85 and associated claim 86).*”

Reason #2 - The first reason claim 85 and claim 86 are patentable is Reason #2 listed under Issue #12.

Reason #3 - The third reason claim 85 and claim 86 are patentable is Reason #3 listed under Issue #12.

8. Conclusion

Finally, the Appellant notes that with respect to the prosecution of the instant application, it appears that the U.S.P.T.O. has not fully complied with the requirements set forth in the APA, 35 U.S.C. 3 and 35 U.S.C. 131. Among other things, the Appellant specifically notes that: at least some of the claims appear to be misclassified under class 705; there appears to have been repeated violations of MPEP 904.03; and the Examiner refused to enter the references from an information disclosure statement submitted in accordance with the requirements of 37 CFR 1.97. These references contain evidence relevant to the patentability of the pending claims. The excluded information disclosure statement has a format identical to that of 10 pages of references for this application previously accepted, reviewed and entered in the January 3, 2007 Office Action. Furthermore, there is no evidence that a declaration from an expert with a background relevant to the instant application has been considered. At the same time, an Examiner was allowed to enter rejections under 35 U.S.C. 112 first and second paragraph and 35 U.S.C. 103 in spite of what appears to be substantial evidence that the Examiner and the Technology Center lack the skill in the art required to make meaningful statements in this regard. As a result, relevant information has been ignored while irrelevant and/or incorrect information was entered into the record. Furthermore, the fact that

KSR vs Teleflex has reduced the amount of written description required to support an invention by raising the level of skill in the art that can reasonably be expected from those reading a specification, examining an application and practicing an invention has not been considered.

A valid patent application rejection requires substantial evidence (Gartside, 203 F.3d at 1312). As described in the preceding section, the January 3, 2007 Office Action does not contain any evidence that would support the rejection of a single claim. However, the prosecution of applications involved in related appeals and the January 3, 2007 Office Action for the instant application do provide substantial evidence that: those authoring/signing the Office Action do not appear to understand any of the scientific and/or engineering principles applicable to the pertinent art, those authoring the Office Action do not adhere to any of the well established statutory requirements for authoring valid claim rejections, and that those authoring the Office Action appear to have based the claim rejections on the use of different standards than those used for the review of similar applications filed by larger companies.

For the reasons detailed above, the Appellant respectfully but forcefully contends that each claim is patentable. Therefore, reversal of all rejections is courteously solicited.

Respectfully submitted,

Asset Trust, Inc.

/B.J. Bennett/

B.J. Bennett, President,

Dated: April 20, 2009

9. Claims Appendix

43. A framework system, comprising:

a computer with a processor having circuitry to execute instructions; a storage device available to said processor with sequences of instructions stored therein, which when executed cause the processor to:

obtain a plurality of data related to a value of a business enterprise in a format suitable for processing,

evolve a plurality of network models for connecting one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:

input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance; and

a plurality of relationships between said nodes, each said relationship being characterized by a degree of influence from one node to another; said degree of influence being dependent upon an impact of the element of value represented by said node and its interrelationship with other elements of value

where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.

44. The framework system claimed in claim 43 where one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, market value and combinations thereof.

45. The framework system of claim 43 wherein a network model further comprises:

a summary of value drivers by element of value applied to each of said input nodes, where said summaries summarize the impact of each of said elements of value on one or more aspects of financial performance, the other elements of value and combinations thereof.

46. The framework system of claim 43 further comprising means for training a best fit network model that identifies a relative impact of each element of value on each component of value where the weights from the best fit models are used to identify the relative contribution of each element of value to each component of value net of any impact on the other elements of value.

48. The framework system claimed in claim 43 where a plurality of relationships are quantified for a specified point in time within a sequential series of points in time.
49. The framework system of claim 43 where a relative contribution to the components of value are combined with the present value of said components of value to determine a current operation value of each element of value where the components of value are selected from the group consisting of revenue, expense, capital change and combinations thereof.
50. The framework system of claim 43 where an element of value is selected from the group consisting of brands, customers, employees, and combinations thereof.
51. The framework system of claim 43 where a plurality of network models further comprise a plurality of neural network models that are trained using genetic algorithms.
52. The framework system of claim 43, wherein a plurality of network models further comprise a plurality of business event network models.
54. A firm analysis method, comprising:
- aggregating firm related data from a plurality of systems in accordance with a common data dictionary
- using at least a portion of the data to generate a plurality of network models which connect one or more current elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:
- one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance, and
- a plurality of relationships where each relationship is a function of an impact of each element on other elements of value or an aspect of financial performance;
- where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.
55. The method of claim 54 where one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, market value and combinations thereof.

56. The method of claim 54 wherein said network models further comprise:
a summary of value drivers by element of value applied to each of said input nodes, where said summaries summarize the impact of each of said elements of value on one or more aspects of financial performance, the other elements of value and combinations thereof.
57. The method of claim 54 where one or more weights from a best fit model are used to identify a net impact of each element of value on a component of value selected from the group consisting of revenue, expense, capital change and combinations thereof.
58. The method of claim 54 further comprising training one or more best fit network models that identify a relative impact of each element of value on each of the components of value where one or more weights from the best fit models are used to identify a relative contribution of each element of value to each component of value net of any impact on the other elements of value.
59. The method of claim 58 further comprising training one or more best fit network models using one or more genetic algorithms.
60. The method of claim 54 where a plurality of relationships are quantified for a specified point in time within a sequential series of points in time.
61. The system of claim 54 where a relative contribution to one or more components of value is combined with a present value of said components of value to determine a current operation value of each element of value.
62. The method of claim 54 where one or more elements of value are selected from the group consisting of brands, customers, employees, and combinations thereof.
63. The method of claim 54 where network models further comprise neural network models.
64. The method of claim 54 where a firm is a product, a group of products, a division or a company.
65. The method of claim 54 wherein a plurality of network models further comprise a plurality of business event network models.

66. The method of claim 54 where firm related data includes data captured from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, accounts receivable system, accounts payable system, capital asset system, inventory system, invoicing system, payroll system, purchasing system, the Internet and combinations thereof.

67. A computer readable medium having sequences of instructions stored therein, which when executed cause the processor in a computer to perform a firm analysis method, comprising:

integrating business related data for a firm using a common dictionary,

using at least a portion of the data to generate a plurality of network models which connect one or more elements of value of said firm to one or more aspects of financial performance of said firm, said network models being further comprised of:

one or more input nodes, hidden nodes and output nodes where each input node represents an element of value and each output node represents an aspect of financial performance and a plurality of relationships where each relationship is a function of the impact of each element on other elements of value or an aspect of financial performance

where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing.

68. The computer readable medium of claim 67 where one or more aspects of financial performance are selected from the group consisting of revenue, expense, capital change, market value and combinations thereof.

69. The computer readable medium of claim 67 wherein a network model further comprises:

a summary of value drivers by element of value applied to each of said input nodes, where said summaries summarize the impact of each of said elements of value on one or more aspects of financial performance, the other elements of value and combinations thereof.

70. The computer readable medium of claim 67 where one or more weights from a best fit model are used to identify a net impact of an element of value on revenue, expense and capital change.

71. The computer readable medium of claim 67 where the method further comprises:

training a best fit network model to identify a relative impact of an element of value on a component of value where one or more weights from the best fit model are used to identify a

- relative contribution of each element of value to a component of value net of any impact on the other elements of value.
72. The computer readable medium of claim 71 where the method further comprises: using one or more genetic algorithms to train a best fit network model.
73. The computer readable medium of claim 67 where the relationships are quantified for a specified point in time within a sequential series of points in time.
74. The computer readable medium of claim 67 where the relative contributions to the components of value are combined with the present value of said components of value to determine the current operation value of each element of value where the components of value are revenue, expense and capital change.
75. The computer readable medium of claim 67 where the elements of value are selected from the group consisting of brands, customers, employees, and combinations thereof.
76. The computer readable medium of claim 67 where the network models are neural nets.
77. The computer readable medium of claim 67 where the firm is a product, a group of products, a division or a company.
78. The computer readable medium of claim 67 wherein a plurality of network models further comprise a plurality of business event network models.
79. The computer readable medium of claim 67 where firm data includes data captured from the group consisting of a basic financial system, a human resource system, an advanced financial system, a sales system, an operations system, accounts receivable system, accounts payable system, capital asset system, inventory system, invoicing system, payroll system, purchasing system, the Internet and combinations thereof.
80. An enterprise data integration method, comprising:
- accessing a plurality of data representative of an enterprise via an interface coupled to a plurality of data sources,
 - converting said data to a common schema using an application software segment, and
 - storing said converted data in a database for use in processing,
 - where a plurality of sources further comprise database management systems for systems selected from the group consisting of a basic financial system, a human resource system, an

advanced financial system, a sales system, an operations system, an accounts receivable system, an accounts payable system, a capital asset system, an inventory system, an invoicing system, a payroll system, a purchasing system and combinations thereof.

81. The method of claim 80 wherein a plurality of sources further comprise a plurality of relational databases where said databases use different data formats.

82. The method of claim 80 wherein an interface further comprises a network connection.

83. The method of claim 80 wherein a common schema further comprises a network schema and said common schema contains a common data dictionary where said common data dictionary defines common attributes selected from the group consisting of elements of value, components of value, currencies, units of measure, time periods, dates and combinations thereof.

84. The method of claim 80 wherein the method further comprises completing a conversion and storage of data before processing begins.

85. An intelligent method for analyzing commerce data using a computer, comprising:
identifying a set of data required for analyzing a commercial enterprise,
preparing the identified set of data for use in analysis,
analyzing at least a portion of said data in an automated fashion as required to identify one or more statistics selected from the group consisting of pattern, trend, ratio, average, elapsed time period, percentage, variance, monthly total and combinations thereof, and
using at least a portion of said statistics and data to develop a model of enterprise current operation financial performance using automated learning
where the model mathematically expresses the dynamic characteristics and behavior of each element of value as including direct effects and indirect effects from each element of value.

86. The method of claim 85 wherein the method further comprises using a plurality of genetic algorithms to automatically learn from the data by using processing steps selected from the group consisting of fitness measure re-scaling, random mutation, recalibrating target fitness levels, selective crossover, selective carry-forward and combinations thereof.

10. Evidence Appendix

- Pages 57 – 59 declaration under rule 132, received September 10, 2006
- Page 60 excerpt from Office Action mailed May 9, 2006
- Pages 61 - 62 excerpt from Office Action mailed January 3, 2007
- Page 63 excerpt from Examiner's Answer mailed January 9, 2008
- Page 64 excerpt from reference received March 10, 2008
- Page 65 excerpt from Supplemental Amendment received January 31, 2006
- Page 66 excerpt from reference reviewed September 30, 2005
- Page 67 excerpts from reference reviewed April 14, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 09/761,670

Applicant: Jeff S. Eder

Filed: January 18, 2001

Art Unit: 3628

Examiner: Siegfried Chencinski

Docket No.: AR-16

Customer No.: 53787

DECLARATION UNDER RULE 132

I, Rick Rauenzahn, do hereby declare and say:

My home address is 529 Calle don Leandro, Espanola, New Mexico 87532; I have a B.S. degree in chemical engineering from Lehigh University, an S.M. degree in chemical engineering from The Massachusetts Institute of Technology and a Ph.D. in chemical engineering from The Massachusetts Institute of Technology;

I have worked in the mathematical modeling field for 25 years, concentrating in the disciplines of fluid mechanics, turbulence modeling, numerical methods for partial differential equations, radiation hydrodynamics, and strength of materials. I also have extensive knowledge of computer system administration, particularly for Windows-based, Linux, and Unix systems; I have been employed by Los Alamos National Laboratory and Molten Metal Technologies for the past 23

years.

I further declare that I do not have any direct affiliation with the application owner, Asset Reliance, Inc. I met the inventor for the first time in April 2006. While I joined the Technical Advisory Board for Knacta, Inc., a company run by the inventor in May of 2006, I have not attended a meeting or completed any assignments for the Technical Advisory Board as of the date of this declaration. I have never discussed this patent application or any of the other patent applications owned by Asset Reliance with the inventor or anyone else. Knacta, Inc. has a license to the intellectual property associated with this application.

On August 2, 2006 I was given a copy of U.S. Patent Application 09/761,670 entitled "A method of and system for evaluating cash flow and elements of a business enterprise" filed in the United States Patent Office on January 18, 2001. Until that time I had not read the patent application. I have studied the entire specification in order to closely analyze the claims and drawings. I am totally familiar with the language of the claims and conversant with the scope thereof. I completely understand the invention as claimed.

Based on my experience and training in the field of mathematical modeling and electronic data processing, I have concluded that it would be straightforward for someone of average skill in the art to duplicate the system for evaluating cash flow and elements of a business enterprise as claimed using the information in U.S. Patent Application 09/761,670 together with the patent it cross-references.

Specifically, U.S. Patent Application 09/761,670 together with the patent it cross-references fully describes:

- 1) A framework system (claim 43 and associated claims 44-46 and 48-52);
- 2) A firm analysis method (claim 54 and associated claims 55-66);
- 3) A computer readable media for firm analysis (claim 67 and associated claims 68-79);
- 4) An enterprise data integration method (claim 80 and associated claims 81-

84); and

- 5) An intelligent method for analyzing commerce data using a computer (claim 85 and associated claim 86).

Based on these and other considerations, it is my professional opinion that U.S. Patent Application 09/761,670 together with the patent it cross-references would enable someone of average skill in the relevant arts to recreate and practice a method of and system for evaluating cash flow and elements of a business enterprise as claimed.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patents issuing thereon.

Signed,

/Rick M. Rauenzahn/



Rick Rauenzahn

Date: September 4, 2006

1355-59. This requirement is as much rooted in the Administrative Procedure Act, which ensures due process and non-arbitrary decisionmaking, as it is in § 103. See id. at 1344-45." In re Kahn, Slip Op. 04-1616, page 9 (Fed. Cir. Mar. 22, 2006)." (**Bolding added**).

In this case, the examiner made a judgement that the ordinary practitioner of the art, had he or she seen the Sandretto and Jost references at the time of Applicant's invention, would have seen the teachings, suggestions and obviousness of selectively using the disclosures of the two references in order to develop the features and limitations of claims 52, 63 and 76. Sandretto and Jost both present computer automated applications. Modifying the software and even the hardware employed to operate Sandretto's disclosure with additional software and perhaps additional hardware to add the neural networks teaching by Jost is eminently doable in the computer arts. The practitioner would have had the knowledge and skill to achieve the combinations through employment of appropriate hardware and software manipulations. The examiner's judgement is based on the judgement that the ordinary practitioner in this kind of invention is either solely competent in finance and strategic evaluations of the firm and is sufficiently knowledgeable to get the computer implementation done, or is sufficiently competent in working with one or more collaborating practitioners, assistants or a vendor who have the required computer related knowledge and skills. The details of these computer techniques are outside the scope of this examination and are not claimed. The rational underpinning for this judgement is based on the fact that computer systems hardware and software are extremely flexible, unlike many scientific and technical areas of art where that is not the case. For example, an invention employing a gasket with certain required stiffness characteristics to achieve a certain performance quality cannot have prior art applied to it based on a flexible gasket. Many court opinions are based on such specific factual scenarios where the technical facts may have been misunderstood by an examiner. The examiner is not required to give a technical exposition of how the ordinary practitioner would apply his technical know-how regarding computer systems, since this has been classified as a business methods application. Rather, the burden of proof falls on applicant to present a reasonable case to disprove the examiner's judgement. This requirement is supported by the following

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed September 10, 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609, particularly 1.98 (a)(3)(i) because a concise explanation of the relevance of the items submitted, including the identification of the relevant pages and lines of each IDS document, has not been submitted. The disclosed materials have been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Declaration Submitted Under Rule 132

2. The declaration by Mr. Rick Rauenzahn submitted on September 8, 2006 under Rule 132 has been considered but has been determined to lack relevance because the qualifications submitted by Mr. Rauenzahn do not qualify him as an expert according in the art of financial modeling as required by Rule 132 since Mr. Rauenzahn does not claim to have expertise in any aspect of business and/or financial modeling and because Mr. Rauenzahn's declaration does not make any statements regarding claimed subject matter and/or claimed limitations. Mr. Rauenzahn has claims degrees in chemical engineering at the BS, Masters and PhD levels. Mr. Rauenzahn specifically claims to have experience and expertise in the disciplines of fluid dynamics, turbulence modeling, numerical methods for partial differential equations, radiation hydrodynamics, and strength of materials as an employee of Los Alamos National Laboratory and Molten Metal Technologies for 23 years.

Response to Arguments

21. Applicant's arguments filed on September 8, 2006 with respect to claims 43-46, 48-52, and 54-86 in regard to the rejections under 35 USC 103(a) have been considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendments of claims.

Applicant's arguments filed on September 8, 2006 with respect to claims 43-46, 48-52, and 54-86 in regard to the rejections under 35 USC 112 have been fully considered but they are not persuasive.

ARGUMENT A: Traversal of the rejections of claims 43-86 under 35 USC 101 (p. 20, l. 1 – p. 21, l. 24).

RESPONSE: The examiner has expanded the text of the 101 rejections above in response to Applicant's traversal of the rejections under 35 USC 101.

ARGUMENT B: Traversal of 35 CFR 112-1st and 2nd paragraph rejections (p. 22, l. 1 – p. 25, l. 2).

RESPONSE: The examiner has expanded the text of the 101 rejections above in response to Applicant's traversal of the rejections under 35 USC 101.

ARGUMENT C: Request for Affidavits under 37 CFR 1.104 (p. 27, l. 1 – p. 28, end) regarding the well known use of relational databases, a network schema and a data dictionary.

RESPONSE: Evidence for the well known nature of relational databases, a network schema and a data dictionary to the ordinary practitioner of the art at the time of Applicant's invention are contained in the Microsoft Computer Dictionary for relational databases and a data dictionary. Bunte et al. disclose the use of network schema in US Patent 5,873,070 (Col. 3, ll. 52, 58; Col. 6, ll. 33, 65).

Conclusion

9. **Claim 85** recites the limitations "business event network models". There is insufficient antecedent basis for this limitation in these claims because business event network models are not found in the disclosure.

10. **Claims 43, 54, 67 and 80** are rejected under 35 U.S.C. 112, second paragraph, because they would require undue experimentation for the ordinary practitioner to put to productive, reliable use, tangible and concrete use based on the guidelines for undue experimentation in MPEP 2164.01(a) because they would be beyond the level of one of ordinary skill to successfully use to produce concrete, reliable results which could be replicated, because the art claimed in the disclosure has poor predictability, the invention would require an undue amount of direction by the inventor, because working samples of a concrete input and concrete output are lacking, and the quantity of experimentation needed to make or use the invention based on the content of the disclosure is excessive because it is indeterminable. This meets the test laid out in *In Re Wands*: " A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993)."

11. **Claims 52, 65, 78 and 85** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The expressions "intelligent", "direct effects" and "indirect effects" in claim 85 appear have been added by amendment after the first Office Action. The expression "business event network models" has been added by amendment to claims 52, 65 and 78 in the most recent response. None of these terms appear in the disclosure. Therefore there is insufficient antecedent basis for these limitations in these claims.

12. **Claims 43, 54, 67** each recite the limitation "where each network model from a plurality of network models supports the development of a controlling forecast for use in optimizing purchasing". There is insufficient antecedent basis for this limitation in the

BP NEURAL NETWORK OPTIMIZATION BASED ON AN IMPROVED GENETIC ALGORITHM

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Abstract:

An improved Genetic Algorithm based on Evolutionarily Stable Strategy is proposed to optimize the initial weights of BP network in this paper. The improvement of GA lies in the introducing of a new mutation operator under control of a stable factor, which is found to be a very simple and effective searching operator. The experimental results in BP neural network optimization show that this algorithm can effectively avoid BP network converging to local optimum. It is found by comparison that the improved genetic algorithm can almost avoid the trap of local optimum and effectively improve the convergent speed.

Keywords:

Evolutionarily stable strategy; Genetic algorithm; Neural network; Back propagation (BP) algorithm; Premature convergence

1 Introduction

In recent years, there have been many attempts in designing artificial neural networks automatically, in which the combination of evolutionary algorithms and neural networks has attracted a great deal of attention and one kind of evolutionary artificial neural network has been formed. Evolving neural networks by genetic algorithm were researched earliest of all.

The efficiency of GA has great influences on BP neural network (BPNN) optimization. During application of GA, however, there often exists a problem of premature convergence and stagnation^[1]. Whitley think that selective pressure and selection noise are the main factors of affecting population diversity^[2]. Higher selective pressure often leads to the loss of diversity in the population, which causes premature convergence at the same time of improving convergent speed. Therefore, keeping the balance between population diversity and convergent speed is very important to the performance of GA.

In recent years, many diversity preservation methods have been developed to avoid premature convergence to a local optimum. These can be divided into the following three subclasses:

1)Schemes of alleviating selective pressure to keep the biologic diversity, such as the modification of selection operator^[3-5] and scale-transformation of fit

function^[6]. Unfortunately, these methods often cause another problem of slow rate of convergence or stagnation in searching global optimum at the same time of improving population diversity.

2)Non-static mutation rate control schemes including dynamic^[7-10], adaptive or self-adaptive^[10-12] mechanism to control the rate of mutation. The mutation operator is a main operator to keep the biologic diversity, especially in real-coded GA, because it introduces new search space and maintain the genetic diversity of a population, whereas the crossover operator only operates in the known search space. From this point of view, high mutation rate is good for searching the global solution. But too high mutation rate will result in blind stochastic search. It has been proved that deterministically varying mutation rates during the search have a better performance compared to the fixed mutation rate schemes. Unfortunately, there are some drawbacks in non-static mutation rate control schemes. The dynamic parameter control scheme requires for the user to devise a schedule specifying the rate at which the parameter is typically decreased. The self-adaptive scheme does not need such a specific schedule. Unfortunately it is rather complicated to explain to novice users, and as a result they usually prefer the simple fixed mutation rate scheme.

3)Spatial separation schemes^[13-14]. One of the most important representatives is the distributed GA's (DGA's). Their premise lies in partitioning the population into several subpopulations, each one of them being processed by a GA independently of the others. Furthermore, a migration mechanism produces a chromosome exchange between the subpopulations. In this way, a distributed search and an effective local tuning may be obtained simultaneously. They are suitable for producing multi-resolution in search space but run risk of running too much CPU time.

A genetic algorithm based on evolutionarily stable strategy (ESSGA) is proposed in this paper to try to pursue better balance between population diversity and convergent speed by means of introducing a new kind of mutation operator under the control of a stable factor. Different from other mutation rate control schemes, this mutation operator only acts on some of the preponderant individuals under the control of a stable factor, which keeps the ratio of quantity

REMARKS

The Assignee would like to thank the Examiner for the courtesy extended to Jeff Oster during his recent visit to Washington D.C..

It is our understanding that concern was expressed about the use of the word "relationship" in claim 43 during the interview. The Assignee has provided an excerpt from a network definition that shows the use of the word relationship in claim 43 is consistent with a formal definition of a network.

More formally, a network contains a set of objects (in mathematical terms, nodes) and a mapping or description of relations between the objects or nodes. The simplest network contains two objects, 1 and 2, and one relationship that links them. Nodes 1 and 2, for example, might be people, and the relationship that links them might be "are standing in the same room."

This definition of a network is well known to those of average skill in the arts of artificial intelligence (class 706), business methods (class 705) and data processing (class 707) that are contained in the above referenced application and other cross referenced applications.

Reservation of rights

The Assignee hereby explicitly reserves the right to present the previously modified and/or canceled claims for re-examination in their original format. The cancellation or modification of pending claims to put the instant application in a final form for allowance and issue is not to be construed as a surrender of subject matters covered by the original claims before their cancellation or modification.

Conclusion

The pending claims are of a form and scope for allowance. Prompt notification thereof is respectfully requested.

Respectfully submitted,

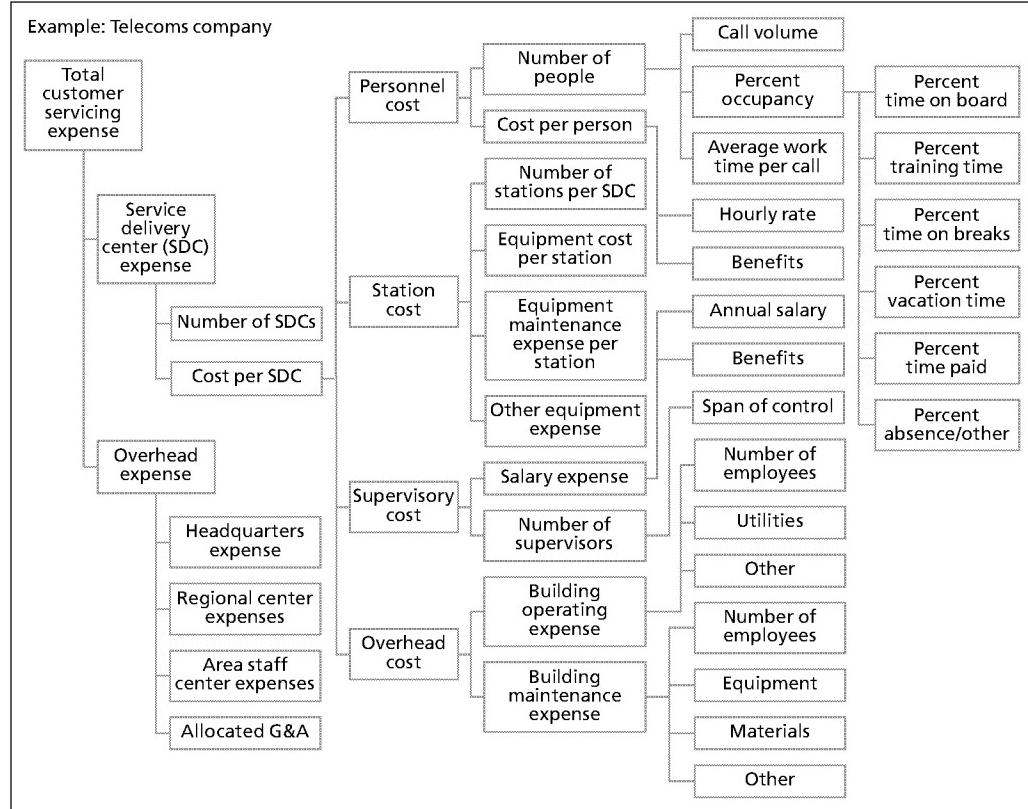


B.J. Bennett, President Asset Trust, Inc.
Date: January 31, 2006

WHAT IS VALUE-BASED MANAGEMENT?

Exhibit 4

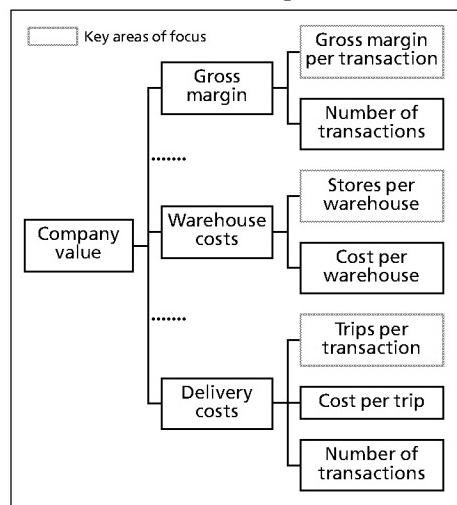
Value drivers in customer servicing



What is important is that these key value drivers, although only a small part of the total business system, have a significant impact on value, are measurable from month to month, and are clearly under the control of line management.

Exhibit 5

Value drivers for a hard goods retailer



To see how the numbers might work, consider the list of value drivers for a hard goods retailer shown in Exhibit 5. The value of the company derives partly from gross margin, warehouse costs, and delivery costs. Gross margin, in turn, is determined by gross margin per transaction and the number of transactions (which can be themselves further disaggregated if necessary). Warehouse costs are a function of the number of retail stores per warehouse and the cost per warehouse. Finally, delivery costs are determined by the number of trips per transaction, the cost per trip, and the number of transactions.

Network element	U.S. Patent 6,249,768
Data Collection	Within the SCN framework <u>we expect to integrate the beliefs, expert opinions</u> , and measurable data in a way that aids the formulation and analysis of a firm's strategy (see Tulskie Column 21, Line 67 through Column 22, Line 2)
Network structure: 1 st layer nodes and 2 nd layer nodes	First layer nodes are resources, second layer nodes are capabilities, "from a given core capability, <u>the modeler needs to identify the capabilities directly supported by it</u> . Support may be either positive (enhancing) or negative (conflicting). Then for each of these capabilities, the same process has to be repeated. As discussed above, <u>a capability identified in a previous step may need to be split into multiple capabilities when it turns out that there are multiple types of outcomes from that capability...</u> This process continues until the tangible firm assets and resources are identified and linked to the capabilities they support (see Tulskie, Column 20, Line 53 – C21, L 1)
Network structure: 3 rd layer nodes	Value propositions 101 appear at the top level. These are the major groupings of value that the firm offers. As a group, they may represent a unique offering to the market. General examples are: low cost, high quality, and customer convenience. (see Tulskie, Column 12, Line 11 through Line 14)
Network structure: Node connection weights – layer 1 to layer 2 and Node connection weights – layer 2 to layer 3	Relationships as depicted within this framework <u>are not necessarily completely deterministic or even necessarily observable</u> . They encompass all cause and effect linkages that are observable and all cause and effect linkages <u>that a management team believes to exist</u> . (see Tulskie, Column 21 Line 46 through Line 51)
Learning parameters	In some areas, these attributes are objectively observable or measurable. <u>In other cases, we must rely on more subjective individual or collective experience.</u> (see Tulskie, Column 9, Line 9 through Line 15)

11. Related Proceedings Appendix

Attached opinion appears to be based largely on an assumption that VBM is different than SVA in a number of areas where they are in fact the same (see page 66, Evidence Appendix). Opinion also appears to contain a number of clear errors because:

- 1) The cited documents failed to make the invention as a whole obvious by teaching away from the claimed methods. Bielinski teaches: efficient market in place of an inefficient market, a tree based analysis in place of a network analysis and three determinants of market value (cash flow, cash flow risk and growth) in place of the elements of value as determinants of value. Brown teaches: scoring in place of regression and that 40 external factors determine market value in place of elements of value as determinants of value.
- 2) The cited combination failed to teach one or more limitation for every claim.
- 3) Modifying the cited documents to replicate the claimed functionality would require changes in the principles of operation for the cited inventions and destroy their ability to function. Bielinski would have to change from a tree to a network and it is well known that substituting a neural network sigmoid in place of the tree node would destroy the ability of the tree to function. Brown would have to change to using elements of value as determinants of value and use regression in place of scoring.
- 4) The cited documents teach away from their own combination. Bielinski specifically prohibits the use of projections while the cited portion of Brown teaches a method with only one function: projecting changes in stock prices.
- 5) Bielinski specifically states that the disclosed VBM method follows the principles of Shareholder Value Analysis (SVA). One of the well known principles of SVA is the efficient market theory. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the efficient market theory.
- 6) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is the tree based analysis of cash flow. In spite of these facts, the BPAI said there was no evidence that Bielinski taught the tree based analysis of cash flow.
- 7) Bielinski specifically states that the disclosed VBM method follows the principles of SVA. One of the well known principles of SVA is that there are 3 determinants of market value. In spite of these facts, the BPAI said there was no evidence that Bielinski taught that there were 3 determinants of market value.

1 UNITED STATES PATENT AND TRADEMARK OFFICE

2
3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES

6
7
8 *Ex parte* JEFFREY SCOTT EDER

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11 Appeal 2007-2745
12 Application 09/761,671
13 Technology Center 3600

14
15
16 Decided: August 29, 2007

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18
19 Before TERRY J. OWENS, HUBERT C. LORIN, and ANTON W. FETTING,
20 *Administrative Patent Judges.*

21 FETTING, *Administrative Patent Judge.*

22 DECISION ON APPEAL

23
24
25
26 STATEMENT OF CASE

27 Jeffrey Scott Eder (Appellant) seeks review under 35 U.S.C. § 134 of a Final
28 rejection of claims 69-103, the only claims pending in the application on appeal.

29 We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6.

30
31 We AFFIRM.

1 The Appellant invented a way to calculate and display a forecast of the impact
2 of user-specified or system generated changes in business value drivers on the
3 other value drivers, the elements, the components, the financial performance and
4 the long term value of a commercial enterprise that utilizes the information from a
5 detailed valuation of the enterprise (Specification 9:2-7).

6 An understanding of the invention can be derived from a reading of exemplary
7 claim 69, which is reproduced below [bracketed matter and some paragraphing
8 added].

9 69. A current operation modeling method, comprising:

10 [1]

11 [a] integrating transaction data

12 [i] for a commercial enterprise

13 [ii] in accordance with a common data dictionary;

14 [b] using a neural network model

15 [i] to identify one or more value driver candidates

16 [ii] for each of one or more elements of value from said data,

17 [c] using an induction model

18 [i] to identify one or more value drivers from said candidates
19 and

20 [ii] define a contribution summary

21 [1] for each element of value

22 [2] for each of one or more aspects of a current operation
23 financial performance

24 [3] using said value drivers, and

25 [d] creating a plurality of network models

26 [i] that connect the elements of value

27 [ii] to aspects of current operation financial performance

1 [iii] using said contribution summaries

2 [2]

3 [a] where the elements of value are selected from the group consisting
4 of

5 [i] brands,

6 [ii] customers,

7 [iii] employees,

8 [iv] intellectual capital,

9 [v] partners,

10 [vi] vendors,

11 [vii] vendor relationships and

12 [viii] combinations thereof,

13 [b] where the induction models are selected from the group consisting
14 of

15 [i] lagrange,

16 [ii] path analysis and

17 [iii] entropy minimization,

18 [c] where the network models support automated analysis through
19 computational techniques and

20 [d] where the aspects of current operation financial performance are
21 selected from the group consisting of

22 [i] revenue,

23 [ii] expense,

24 [iii] capital change,

25 [iv] cash flow,

26 [v] future value,

27 [vi] value and

28 [vii] combinations thereof.

1

2 This appeal arises from the Examiner's Final Rejection, mailed June 13, 2006.
3 The Appellant filed an Appeal Brief in support of the appeal on October 3, 2006.
4 An Examiner's Answer to the Appeal Brief was mailed on January 9, 2007. A
5 Reply Brief was filed on January 27, 2007.

6

PRIOR ART

1

The Examiner relies upon the following prior art:

8 Daniel W. Bielinski, *How to sort out the premium drivers of post-deal value*,
9 Mergers and Acquisitions, Jul/Aug 1993, Vol. 28, Iss. 1, pg. 33, 5 pgs. (Bielinski)

10 Carol E. Brown, James Coakley, and Mary Ellen Phillips, *Neural networks enter*
11 *the world of management accounting*, Management Accounting, May 1995, Vol.
12 76, Iss. 11, p. 51, 5 pgs. (Brown)

13

The Appellant relies upon the following prior art, already of record:

¹⁴ Alfred Rappaport, *Creating Shareholder Value*, A Guide for Managers and
¹⁵ Investors, pp. 39, 70, 171, and 172, ISBN 0-684-84410-9, 1998 (Rappaport)

1

REJECTION

17 Claims 69-103 stand rejected under 35 U.S.C. § 103(a) as unpatentable over
18 Bielinski and Brown.

10

ISSUES

20 Thus, the issue pertinent to this appeal is whether the Appellant has sustained
21 its burden of showing that the Examiner erred in rejecting claims 69-103 under
22 35 U.S.C. § 103(a) as unpatentable over Bielinski and Brown.

1 FACTS PERTINENT TO THE ISSUES

2 The following enumerated Findings of Fact (FF) are believed to be supported
3 by a preponderance of the evidence.

4 *Claim Construction*

- 5 01. Entropy minimization is an induction algorithm that, starting with
6 nothing, adds variable to composite variable formula as long as they
7 increase the explainability [sic] of result (Specification, 47:Table 23).
- 8 02. LaGrange is an induction algorithm that is designed to identify the
9 behavior of dynamic systems and uses linear regression of the time
10 derivatives of the system variables (Specification, 47:Table 23).
- 11 03. Path Analysis is an induction algorithm that is essentially equivalent
12 to multiple linear regression that finds the least squares rule for more
13 than one predictor variable (Specification, 47:Table 23).

14 *Bielinski*

- 15 04. Bielinski is directed towards describing how Value Based
16 Management (VBM), an advancement in discounted cash flow
17 modeling, centers on what specific steps can be taken operationally and
18 strategically to add value to a target organization (Bielinski, 1:Abstract).
- 19 05. Bielinski describes how sensitivity analysis of past results offers clues
20 to what can be done in the future and which value drivers should receive
21 the most attention to achieve optimal rewards. The VBM technique
22 allows the analyst to figure key decision making trade-offs, since
23 attention to one driver may generate negative effects on others or 2 or

1 more drivers may have to be varied in concert to produce the best results
2 (Bielinski, 1:Abstract).

3 06. Bielinski describes Value-Based Management (VBM), which keys on
4 a target's historical operations rather than future projections. VBM also
5 can calculate the results of trade-offs when decision makers must choose
6 between a series of factors that can be changed to enhance post
7 acquisition value (Bielinski, 1:Bottom ¶ - 2:Top line).

8 07. Bielinski describes the best-known valuation tool designed to
9 facilitate value creation and cash flow enhancement as Shareholder
10 Value Analysis (SVA), introduced in the 1980s by Prof. Alfred
11 Rappaport of Northwestern University (Bielinski, 2:First full ¶).

12 08. SVA may be defined as a two-step process. First, a discounted cash
13 flow business valuation is performed. A projection of future cash flow
14 (including a residual) is developed and discounted at an appropriate rate,
15 usually the cost of capital, to arrive at an indicated value. Second, key
16 factors (or value drivers), such as growth, profit margins, etc., are varied
17 systematically to test the sensitivity of the indicated business value to
18 each driver. Standard SVA sensitivity analysis changes each value driver
19 plus or minus 1%, although analysts now often use "relevant ranges" and
20 different percentages for upside and downside swings to reflect
21 prevailing business realities (Bielinski, 2:First full ¶).

22 09. SVA has limitations often magnified into constraints that necessitate
23 modifying standard SVA analysis. Thus, Rappaport describes and
24 distinguishes VBM, a first cousin to SVA, which has resulted from these
25 modifications. Bielinski provides an abbreviated overview of VBM and

describes how it differs from the traditional SVA framework (Bielinski, 2:Second and third full ¶'s).

10. Rather than use projections of future cash flow like SVA, the VBM framework utilizes historical cash flow. Five years of historical cash flow are added up to arrive at a cumulative baseline cash flow number. That is in contrast to SVA's method of discounting future cash flows to reach an indicated value. Instead of testing the sensitivity of a value based on a projection, VBM tests the sensitivity of the historical cash flow. VBM tells the executive how much more or less cash flow would be in the bank today if certain events had occurred differently or if the company had operated differently in the past five years (Bielinski, 2:Fifth and sixth full ¶'s).

11. The use of actual historical data, rather than projections, has proven useful in testing the impact of alternative scenarios against the reality of actual events. It also has served as a catalyst to identify and implement actions that generate improvements. As long as a company's fundamental structure does not change going forward, the results provide meaningful insight regarding the probable outcomes of future strategic action, to the extent that risk is not increased, an executive may reasonably assume that an increase from historical cash flow trends likely would translate into enhanced value (Bielinski, 2:Seventh full ¶).

12. VBM utilizes drivers that are more directly linked to operations. For example, rather than use operating profit margin as a broad value driver, a VBM analysis on a manufacturer would include a breakdown of cost of goods sold by key components (Bielinski, 2:Eighth full ¶).

- 1 13. Bielinski provides an example of a mix for VRM analysis including
2 materials, human resources, technology and capital, and other costs of
3 goods sold as value drivers (Bielinski, 2:Bottom five full ¶'s).
- 4 14. VBM essentially utilizes SVA principles but advances the basic
5 techniques by incorporating historical data, operations-linked value
6 drivers, and concurrent changes in multiple value-drivers (Bielinski,
7 3:Third full ¶).
- 8 15. Bielinski shows the sensitivity of the baseline cash flow to changes in
9 key factors. Showing how results might have turned out differently if
10 operating or strategic changes been effected in the recent past suggests
11 improvements that can be made in the future (Bielinski, 3:Sixth full ¶).
- 12 16. Sensitivity analysis can show how changes in key cost and operating
13 components can impact cash flow. One striking conclusion is that the
14 areas where the big dollars are do not always offer the greatest
15 opportunities to improve cash flow and value (Bielinski, 3:Seventh and
16 eighth full ¶).
- 17 17. Bielinski describes how SVA can tie strategic changes directly to
18 manufacturing by future initiatives to control costs, eliminating
19 overspecification and establishing better value chain management
20 (Bielinski, 3:Bottom ¶).
- 21 18. And if both the acquirer and target utilize VBM in constructing a
22 projection, the two sides might come close to reaching a consensus on
23 what constitutes a "realistic" projection of future performance (Bielinski,
24 4:Bottom ¶).

1 19. With VBM, sensitivity analysis of past results offers clues to what can
2 be done in the future and which value drives - e.g., sales growth, profit
3 margins, productivity, etc. - should receive the most attention to achieve
4 the optimal rewards. Additionally, the VBM technique allows the analyst
5 to figure key decision making trade-offs, since attention to one driver
6 may generate negative effects on others or two or more drivers may have
7 to be varied in concert to produce the best results (Bielinski, 5:Keys to
8 creating value).

9 *Brown*

10 20. Brown is an accounting journal article describing how artificial
11 intelligence (AI) is implemented in business practices. Three of the most
12 common methods parallel the way people reason: rules (inference
13 procedures), cases (case-based reasoning), and pattern matching (neural
14 networks). These methods may be used separately or in combination and
15 currently are being used to solve a variety of business tasks (Brown
16 51:Left col., Bottom ¶ - Center col.).

17 21. Neural networks use pattern matching. The financial services industry
18 with its large databases has fielded several successful neural network
19 applications, and neural networks based on information about customers
20 or potential customers have proved effective. If large databases exist
21 with which to train a neural network, then use of that technology should
22 be considered. For a neural network the large database can be used as the
23 equivalent of the human expert (Brown 52:Center col., Second ¶).

1 equity portfolio of its pension fund. Forty indicators are used to rank the
2 expected future returns of 1,000 equities. Currently owned stocks are
3 sold and are replaced by those with future return rating over a certain
4 cutoff, which results in an 80% monthly turnover. The portfolio return,
5 net of transaction costs, exceeds that of the Standard & Poor's 500 index.
6 Other firms use neural network to predict the S & P 500 index and the
7 performance of stocks and bonds to help market traders in making their
8 buy, hold, and sell decisions. The system recognizes patterns in market
9 activity before they are apparent to a human, which may mean millions
10 in trading profits (Brown 56:Center col., Investments).

11 *Rappaport*

- 12 27. Rappaport describes techniques for creating shareholder value
13 (Rappaport Title).
- 14 28. A component of the cost of equity is a risk premium. One way of
15 estimating the risk premium for a particular stock is by computing the
16 product of the market risk premium for equity (the excess of the
17 expected rate of return on a representative market index such as the
18 Standard & Poor's 500 stock index over the risk-free rate) and the
19 individual security's systematic risk, as measured by its beta coefficient
20 (Rappaport 39:Middle full ¶).
- 21 29. Rappaport teaches that three factors determine stock prices: cash
22 flows, a long-term forecast of these cash flows, and the cost of capital or
23 discount rate that reflects the relative risk of a company's cash flows.
24 The present value of a company's future cash flows, not its quarterly
25 earnings, determines its stock price (Rappaport 70:Last full ¶).

- 1 30. Rappaport teaches that business value depends on seven financial
2 value drivers: sales growth, operating profit margin, incremental fixed
3 capital investment, incremental working capital investment, cash tax
4 rate, cost of capital, and value growth duration. While these drivers are
5 critical in determining the value of any business, they are too broad to be
6 useful for many operating decisions. To be useful, operating managers
7 must establish for each business the micro value drivers that influence
8 the seven financial or macro value drivers.
- 9 31. Rappaport teaches that an assessment of these micro value drivers at
10 the business unit level allows management to focus on those activities
11 that maximize value and to eliminate costly investment of resources in
12 activities that provide marginal or no potential for creating value. Value
13 driver analysis is a critical step in the search for strategic initiatives with
14 the highest value-creation leverage. Isolating these key micro value
15 drivers enables management to target business unit operations that have
16 the most significant value impact and those most easily controlled by
17 management.
- 18 32. Rappaport teaches that the first step of a value driver analysis is to
19 develop a value driver "map" of the business. This involves identifying
20 the micro value drivers that impact sales growth, operating profit
21 margins, and investment requirements. Armed with a better
22 understanding of micro value driver relationships, the next step is to
23 identify the drivers that have the greatest impact on value.
- 24 33. Rappaport provides an illustrative table (Rappaport 172:Figure 9-3.
25 Micro and Macro Value Drivers) that presents the sensitivity of

1 shareholder value to changes in selected drivers for retail as well as
2 industrial marketing (Rappaport 172:Top ¶).

3 34. Rappaport teaches that most managers believe they can identify the
4 key drivers for their business. However, these drivers may in many cases
5 be appropriate for a short-term-earnings-driven business rather than an
6 organization searching for long-term value, Experience shows that value
7 driver sensitivities are not always obvious. Therefore, quantifying
8 sensitivities is a valuable exercise for both operating and senior
9 management (Rappaport 172:First full ¶).

10 PRINCIPLES OF LAW

11 *Claim Construction*

12 During examination of a patent application, pending claims are given
13 their broadest reasonable construction consistent with the specification. *In*
14 *re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550 (CCPA 1969); *In*
15 *re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364, (Fed. Cir. 2004).

16 Although a patent applicant is entitled to be his or her own lexicographer of
17 patent claim terms, in *ex parte* prosecution it must be within limits. *In re Corr*,
18 347 F.2d 578, 580, 146 USPQ 69, 70 (CCPA 1965). The applicant must do so by
19 placing such definitions in the Specification with sufficient clarity to provide a
20 person of ordinary skill in the art with clear and precise notice of the meaning that
21 is to be construed. *See also In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671,
22 1674 (Fed. Cir. 1994) (although an inventor is free to define the specific terms
23 used to describe the invention, this must be done with reasonable clarity,
24 deliberateness, and precision; where an inventor chooses to give terms uncommon
25 meanings, the inventor must set out any uncommon definition in some manner

1 within the patent disclosure so as to give one of ordinary skill in the art notice of
2 the change).

3 *Obviousness*

4 A claimed invention is unpatentable if the differences between it and the
5 prior art are “such that the subject matter as a whole would have been obvious at
6 the time the invention was made to a person having ordinary skill in the art.” 35
7 U.S.C. § 103(a) (2000); *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82
8 USPQ2d 1385, 1391 (2007); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14, 148
9 USPQ 459, 466 (1966).

10 In *Graham*, the Court held that that the obviousness analysis is bottomed on
11 several basic factual inquiries: “[1] the scope and content of the prior art are to be
12 determined; [(2)] differences between the prior art and the claims at issue are to be
13 ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved.” 383
14 U.S. at 17, 148 USPQ at 467. See also *KSR Int'l v. Teleflex Inc.*, 127 S.Ct. at
15 1734, 82 USPQ2d at 1391. “The combination of familiar elements according to
16 known methods is likely to be obvious when it does no more than yield predictable
17 results.” *Id.* 127 S.Ct. at 1739, 82 USPQ2d at 1395.

18 “When a work is available in one field of endeavor, design incentives and
19 other market forces can prompt variations of it, either in the same field or in a
20 different one. If a person of ordinary skill in the art can implement a predictable
21 variation, § 103 likely bars its patentability.” *Id.* 127 S. Ct. at 1740, USPQ2d at
22 1396.

23 “For the same reason, if a technique has been used to improve one device,
24 and a person of ordinary skill in the art would recognize that it would improve

1 similar devices in the same way, using the technique is obvious unless its actual
2 application is beyond his or her skill.” *Id.*

3 “Under the correct analysis, any need or problem known in the field of
4 endeavor at the time of invention and addressed by the patent can provide a reason
5 for combining the elements in the manner claimed.” 127 S. Ct. at 1742, USPQ2d at
6 1397.

7 ANALYSIS

8 *Claims 69-103 rejected under 35 U.S.C. § 103(a) as unpatentable over Bielinski
9 and Brown.*

10 The Appellant argues these claims as a group. Although the Appellant
11 nominally contends each of the independent claims individually, each of the
12 contentions for the remaining independent claims refers back to the arguments for
13 claim 69.

14 Accordingly, we select claim 69 as representative of the group.
15 37 C.F.R. § 41.37(c)(1)(vii) (2006).

16 We initially construe claim 69. We find that claim 69 is divided into two parts,
17 [1] and [2]. Part [1] recites the method steps, which, overall perform element [1.a]
18 integrating data, by step [1.b] using a neural network model to identify a fist set of
19 candidates, from which step [1.c] further identifies a set of drivers, and defines a
20 set of contribution summaries, finally, in step [1.d] creating network models with
21 the summaries. Thus, claim 69 contains three steps, [1.b-d] that are employed
22 within step [1.a]. Steps [1.b-d] are necessarily sequential because each of [1.c] and
23 [1.d] requires output from the preceding step. Part [2] identifies components used

1 in the steps in part [1], and thus limits the terms those components are used in
2 within part [1].

3 The Examiner found that Bielinski describes all of the elements of claim 69
4 except for the use of neural network models using the indicators and a portion of
5 the data to identify value driver candidates. To overcome this deficiency, the
6 Examiner found that Brown described valuation using neural networks and training
7 neural network models for aspects of financial performance using indicators. The
8 Examiner concluded that it would have been obvious to a person of ordinary skill
9 in the art to have combined Bielinski and Brown to take advantage of neural
10 networks to increase accuracy of models (Answer 3:Bottom ¶ - 4:Full page).

11 The Appellant contends that Bielinski¹ and Brown: (1) teach away from the
12 proposed combination; (2) would require a change in operating principle; (3) if
13 combined, would destroy the ability of one of the methods to function; (4) fails to
14 make the invention as a whole obvious; and (5) fails to meet any of the criteria for
15 establishing a *prima facie* case of obviousness (Br. 12:Third ¶).

16 *Teaching Away*

17 (1) The Appellant argues that Rappaport's description of only three market
18 value determinants, is incompatible with Brown's forty determinants (Br.
19 12:Bottom ¶).

¹ The Appellant relies on Rappaport to support many of its arguments regarding Bielinski, apparently treating Rappaport as having been incorporated by reference within Bielinski, based on Bielinski's described usage of Rappaport's Shareholder Value Analysis (Bielinski, 30:First full ¶). The Brief somewhat confusingly attributes text actually found in Rappaport to Bielinski. In this opinion, when we refer to Rappaport's text, based on either the Appellant's contentions, or on our own analysis and fact finding, we attribute that text to Rappaport.

1 We initially find that here, as throughout the arguments in the Brief, the
2 Appellant has somewhat rhetorically attributed the teachings of Rappaport, and in
3 particular certain assertions within Rappaport, to Bielinski as a device to discredit
4 the combination of Bielinski and Brown. While Bielinski refers to the teachings of
5 Rappaport, as we noted in footnote [1], this does not necessarily mean that
6 everything taught and asserted by Rappaport is necessarily embraced by
7 Bielinski's teachings. In particular, Bielinski distinguishes its VBM technique
8 from Rappaport's SVA technique (FF 09).

9 As to the merits of the Appellant's argument, although Rappaport describes
10 that three factors determine stock prices (FF 29), we find that Bielinski describes
11 several market value drivers and implies there are more (FF 19). Also, we find that
12 Bielinski describes drivers of varying scope (FF 12), such that the broadest drivers
13 taught by Rappaport can be broken down into more drivers more directly linked to
14 operations.

15 On the other hand, the forty indicators taught by Brown that the Appellant
16 contends are incompatible relate to portfolio analysis across multiple companies
17 (FF 26) rather than analysis of a single company as taught by Bielinski (FF 04). It
18 is hardly surprising and totally irrelevant that an application comparing multiple
19 companies might use more indicators than a single company.

20 The Appellant has not sustained its burden of showing the Examiner erred.

21 (2) The Appellant argues that Bielinski's teachings imply an efficient market,
22 which is incompatible with an inefficient market implied by Rappaport (Br. 13:Top
23 ¶).

24 The Appellant bases this argument again on Rappaport rather than Bielinski as
25 such, pointing to Rappaport's description of a market risk quantifier, beta (FF 28).

1 The Appellant contrasts this with Brown's use of neural networks to select
2 individual stocks in a portfolio (FF 26). Thus, the Appellant has, as in the previous
3 argument, assigned an SVA teaching by Rappaport to Bielinski that is not
4 necessarily applicable to Bielinski's VBA, and compared Bielinski's single
5 company analysis to Brown's example of portfolio analysis. More to the point, we
6 find there is nothing fundamentally incompatible between a measure of market risk
7 and portfolio selection as suggested by the Appellant, particularly since it is widely
8 known that the purpose of portfolios is to manage risk. None of the three
9 references make any connection between their teachings and either an efficient or
10 inefficient market hypothesis.

11 The Appellant has not sustained its burden of showing the Examiner erred.

12 (3) The Appellant argues that Bielinski's reliance on long term cash flow
13 analysis is incompatible with Brown's short term analysis, and that Bielinski
14 specifically teaches away from the use of projections for any aspect of analysis
15 (Br. 13:Second ¶).

16 We again find that the Appellant compared Bielinski's single company analysis
17 to Brown's example of portfolio analysis, as the short term analysis pointed to by
18 the Appellant (Brown 56:reference to 80% monthly turnover) is again within the
19 investment analysis examples of Brown.

20 We further find that the Appellant is conflating the two distinct operations
21 performed by Bielinski's VBM. In particular, Bielinski first tests the sensitivity of
22 long term historical cash flow to different operating assumptions about past
23 operations (FF 10). Then Bielinski applies the results of this sensitivity analysis to
24 future strategic action (FF 11). Contrary to the Appellant's contention, Bielinski
25 specifically teaches the use of projections in this phase of the analysis.

1 Bielinski does not characterize the time frame for analysis of future action, but
2 we find that such projected time frames typically include relatively short term time
3 frames because of the inherent uncertainty in projections that increases with time
4 frame. We further find that there is nothing in Bielinski that would suggest that the
5 time frame for the projection phase of the analysis is incompatible with a shorter
6 time frame.

7 The Appellant has not sustained its burden of showing the Examiner erred.

8 (4) The Appellant argues that Rappaport's use of a tree based model topology
9 is incompatible with Brown's network topology (Br. 13:Third ¶).

10 The Appellant has made a broad contention of the incompatibility of these
11 methods without a specific showing of the nature of their incompatibility. The
12 Appellant bases this argument again on Rappaport rather than Bielinski as such,
13 contending that Rappaport implicitly teaches a tree methodology. We find that
14 nothing in Rappaport specifically refers to a tree based model topology. Rappaport
15 presents a figure of a tree diagram to represent the hierarchical nature of
16 organizational costs and activities (FF 33), but makes no representation as to how
17 this is incorporated within the model.

18 Even if Bielinski's VBM were to employ a tree based methodology, we find
19 nothing inconsistent with employing a neural network within each of the branches
20 of the tree's analysis. Further, we find nothing incompatible with assigning neural
21 network analysis to Bielinski's phase of finding driver candidates as in claim 69
22 element [1.b.] and assigning a tree based induction model to identify drivers as in
23 element [1.c.]. The Appellant has not made any contention otherwise.

24 The Appellant has not sustained its burden of showing the Examiner erred.

1 (5) The Appellant argues that Bielinski's usage of sensitivity analysis is
2 incompatible with Brown's neural network scoring for the same data (Br.
3 13:Bottom ¶).

4 We again find that the Appellant compared Bielinski's single company analysis
5 to Brown's example of portfolio analysis, as the scoring pointed to by the
6 Appellant (Brown 56:reference to ranking of future returns of stocks) is again
7 within the investment analysis examples of Brown.

8 Further, Bielinski applies the results of its sensitivity analysis to future strategic
9 action (FF 11). Similarly, Brown applies its results to future strategic actions (FF
10 22). We find nothing incompatible between using the results of sensitivity
11 analysis, their implications for future actions, and the results of neural networks for
12 suggesting future actions.

13 The Appellant goes on to argue that Bielinski and Brown are measuring the
14 same thing and there would be no point in using two methodologies to measure the
15 same thing (Br. 13:Bottom ¶). We find this is not an argument of incompatibility,
16 but of so much compatibility as to be redundant. We further find that Bielinski and
17 Brown base their analysis on different inputs (Bielinski using cash flows and
18 Brown using large databases) and the use of different analytical methods to
19 converge on a common result to reduce uncertainty is widely known and applied.

20 The Appellant has not sustained its burden of showing the Examiner erred.

21 *Changing Principle of Operation*

22 The Appellant argues that Bielinski and Rappaport's Shareholder Value
23 Analysis (SVA) would change Brown's neural network because it would use a tree
24 based analysis, acknowledge that the efficient market theory does not explain all

1 value changes, and acknowledge that cash flow explains only a portion of the value
2 of an enterprise (Br. 14:Top ¶). The Appellant further argue that Bielinski's Value
3 Based Management (VBM) would change Brown's strict reliance on historical
4 cash flow and the related prohibition against using projections of any kind (Br.
5 14:Second ¶).

6 We find that these contentions are all repetitions of those made under the rubric
7 of teaching away, *supra*, but couched as changing principles of operation, and our
8 findings are the same. The Appellant has made no contention specifically
9 demonstrating that the combination of Bielinske and Brown would necessarily
10 change the principles of their operation, particularly since Brown's neural network
11 might be used in performance of element [1.b.] and Bielinski's VBM in
12 performance of [1.c.] of claim 69, thus not requiring any overlap of their operation.

13 The Appellant has not sustained its burden of showing the Examiner erred.

14 *Destruction of Ability to Function*

15 The Appellant argues that VBM requires that inputs to each node in a tree
16 arithmetically combine to produce an input to a higher level in the tree. The
17 Appellant contends that use of a neural network would destroy the ability to
18 arithmetically generate the numbers required at each tree node. The Appellant
19 similarly contends that the use of a tree would destroy the neural network's ability
20 to function (Br. 14:Bottom ¶ - 15:Top ¶).

21 We find that these contentions are all repetitions of those made under the rubric
22 of teaching away, *supra*, but couched as destroying the ability to function, and our
23 findings are the same. The Appellant has made no contention specifically
24 demonstrating that the combination of Bielinske and Brown would necessarily
25 destroy the abilities of their operation, particularly since Brown's neural network

1 might be used in performance of element [1.b.] and Bielinski's VBM in
2 performance of [1.c.] of claim 69, thus not requiring any overlap of their operation.

3 The Appellant has not sustained its burden of showing the Examiner erred.

4 *Failure to Make Invention as a Whole Obvious*

5 The Appellant repeats the arguments regarding teaching away and concludes
6 that the invention is therefore not obvious as a whole (Br. 15:First full ¶).

7 We find that these contentions are all repetitions of those made under the rubric
8 of teaching away, *supra*, but couched as making the invention as a whole obvious,
9 and our findings are the same.

10 The Appellant has not sustained its burden of showing the Examiner erred.

11 *Failure to Make Prima Facie Case for Obviousness*

12 The Appellant argues (1) there is no evidence for the motivation to combine
13 the references; (2) there is no reasonable expectation of success for the same
14 reasons the combination would destroy their ability to function; and (3) the
15 combination fails to include optimization techniques (Br. 15:Bottom ¶ - 16:Top
16 three ¶'s).

17 We find that both Bielinski and Brown describe analytical techniques
18 employed to find drivers for improving organizational performance. Brown
19 teaches that neural networks may be used to analyze past business transactions so
20 they can understand customers' buying patterns, whereas Bielinski teaches how
21 VBM sensitivity analysis of past results offers clues to what can be done in the
22 future and which value drivers should receive the most attention to achieve optimal
23 rewards. Thus both are directed towards analysis of past business operations to
24 offer clues to changing future operations to improve business performance. It

1 would have been obvious to a person of ordinary skill in the art to have adapted
2 techniques from each of Brown and Bielinski to provide the advantages of each
3 technique in improving overall performance.

4 The Appellant has not sustained its burden of showing the Examiner erred.

5 *Reply Brief*

6 We find that the Appellant has made general allegations that the combination
7 of Bielinski and Brown fails to teach or suggest any of the claim limitations of
8 claims 77-103 for the first time in the Reply Brief. A statement which merely
9 points out what a claim recites will not be considered an argument for separate
10 patentability of the claim. 37 C.F.R. 41.37(c)(1)(vii). A general allegation that the
11 art does not teach any of the claim limitations is no more than merely pointing out
12 the claim limitations. Thus, these claims fall along with claim 69.

13 The Appellant has not sustained its burden of showing that the Examiner erred
14 in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over Bielinski
15 and Brown.

16 CONCLUSIONS OF LAW

17 The Appellant has not sustained its burden of showing that the Examiner erred
18 in rejecting claims 69-103 under 35 U.S.C. § 103(a) as unpatentable over the prior
19 art.

20 On this record, the Appellant is not entitled to a patent containing claims
21 69-103.

1 DECISION

2 To summarize, our decision is as follows:

- 3 • The rejection of claims 69-103 under 35 U.S.C. § 103(a) as unpatentable
4 over Bielinski and Brown is sustained.

5 No time period for taking any subsequent action in connection with this appeal
6 may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

7

8 AFFIRMED

9

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11 vsh

12

13

14

15 ASSET TRUST, INC.
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ASSET TRUST, INC.
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Appeal No: 2007-2745
Application: 09/761,671
Appellant: Jeffrey Scott Eder

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JUN - 5 2007

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Application 09/761,671 was received from the Technology Center at the Board on April 30, 2007 and has been assigned Appeal No: 2007-2745.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on: October 03, 2006
Reply Brief filed on: January 27, 2007
Request for Hearing filed on: NONE

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